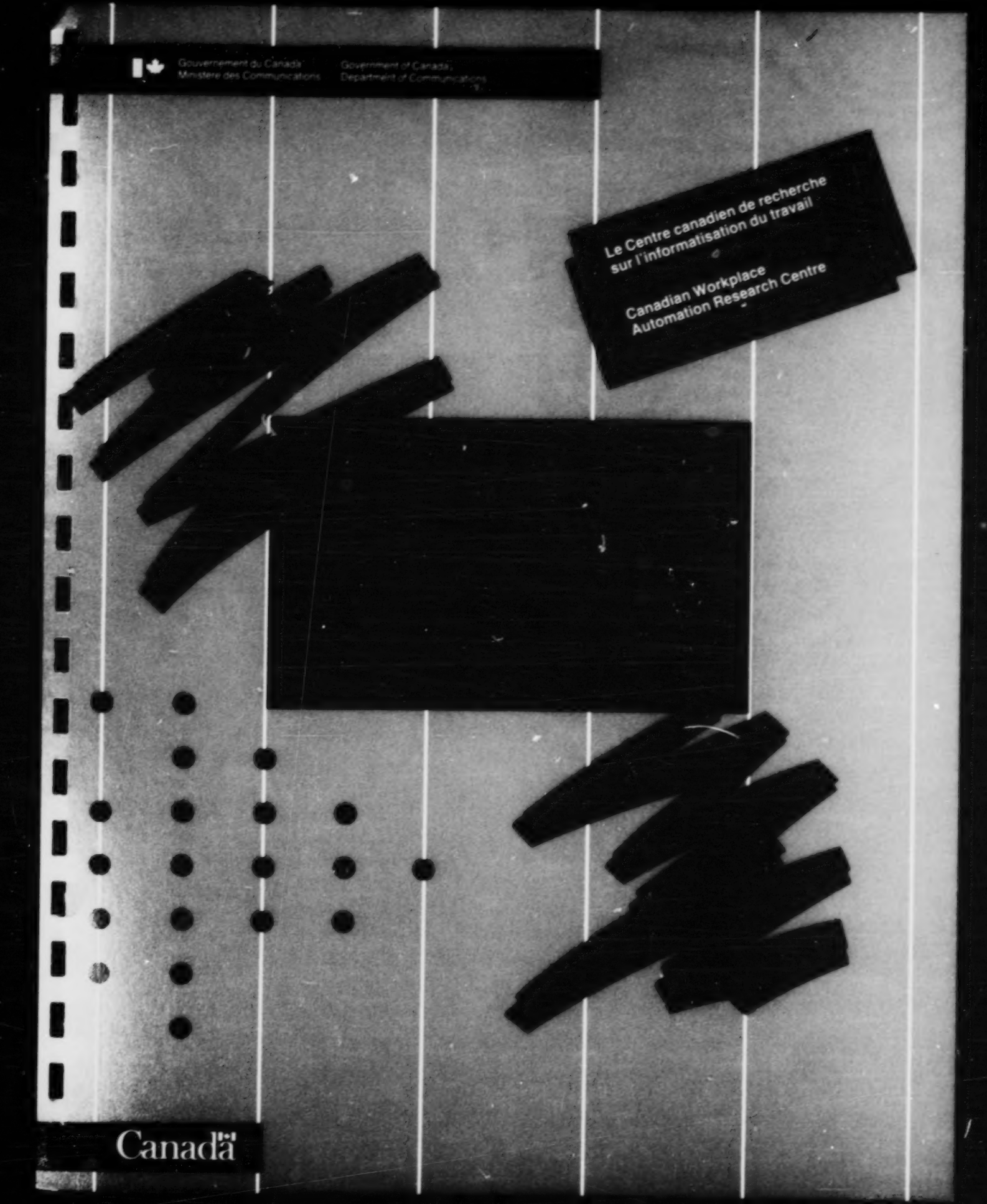
Gouvernement du Canada
Ministère des Communications
Government of Canada
Department of Communications
Le Centre canadien de recherche sur l'informatisation du travail
Canadian Workplace Automation Research Centre
Canada

Government of Canada
Department of Communications
Canadian Workplace Automation Research Centre
External Collaboration Directorate

DOWNLOADING: A TOOL FOR CREATING A LOCAL DATABASE

FEASIBILITY STUDY

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This study was carried out as part of an exchange program between the Canadian Workplace Automation Research Centre, Communications Canada, and the School of Library and Information Sciences, University of Montreal. The authors wish to thank Gilles Chiasson for his invaluable assistance with the computer-related aspects of the project. The views expressed are those of the authors alone.

FOREWORD

The creation of a local database through downloading is a well-known, well-documented although still rather uncommon information technique. Many appropriate software packages and modules of database management systems exist that allow and facilitate this process.

At the Canadian Workplace Automated Research Center (CWARC), Communications Canada, a research project was conducted, from February 1986 through February 1988, to design an integrated service of information resources (ISIR) which would allow the Center's researchers and administrators to access, in a single system, all available information resources: the catalog of the documentation center, a bibliographic database, the Center's archives, the factual databases (directory of specialists, on-going research, grants, etc.).

Our contribution to this project was to conduct a feasibility study to determine the technical, economical and legal implications of creating a bibliographic database by systematically downloading, from external databases, citations relevant to the topic of workplace automation (office automation), by converting and reformating them, and by uploading them in the local information system (MINISIS).

This paper presents the results of the study, the problems encoutered and our recommendations to CWARC.

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1. OBJECTIVES OF ISIR

1.1 ISIR (Integrated Service of Information Resources) research project: general objectives

Use of downloading to create a local database was part of a research project aimed at implementing an integrated service of information resources (ISIR) at the Canadian Workplace Automation Research Centre (CWARC), Communications Canada.

This project was intended to: 1) inventory all the documentary information resources of CWARC: bibliographic database, archives, Documentation Centre catalogue and source databases; 2) harmonize and standardize descriptions (analysis and indexing); and 3) computerize management and access in an integrated system (multifile system that could be consulted as a whole or individually and a single search language).

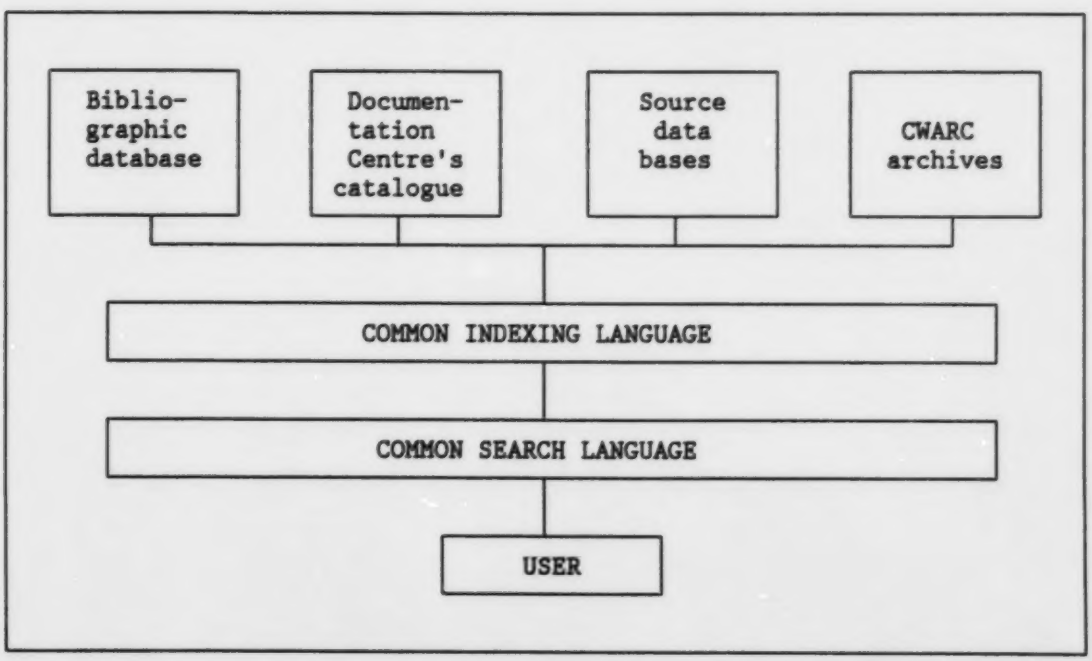


Fig. 1 Integrated Service of Information Resources (ISIR)

1.2 Specific objectives of the "Local Database" module

In the course of their activities, CWARC researchers and managers "consume" and generate information. To support their research and make informed decisions, all these individuals must have rapid, simultaneous and unified access to all available information related to their field. To make this possible, one of the proposals under the ISIR research project was to create a **local bibliographic database** based on a systematic consultation of external bibliographic databases, downloading of pertinent citations, reformatting of these citations and integrating them into a computer system chosen to manage the various databases making up the ISIR service[1].

Our starting hypothesis was as follows:

> **It is technically feasible, economically advantageous and legally acceptable to create a local bibliographic database by systematically downloading bibliographic citations from commercially available external databases.**

---

[1] Throughout this document, we will use "ISIR" to refer to the research project under discussion and will specify "ISIR service" when referring to the Integrated Service of Information Resources made up of the various information services available at CWARC (Documentation Centre, archives, interlibrary loan, online searching, etc.). This service is currently using some modules of the ISIR system, e.g. the Documentation Centre catalogue and the archive module.

Figure 2 shows the various stages in this process.

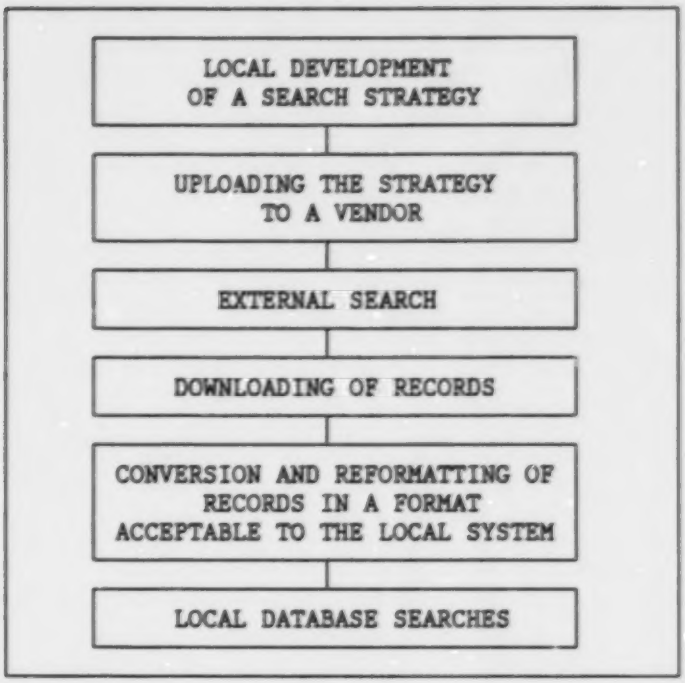

LOCAL DEVELOPMENT OF A SEARCH STRATEGY
UPLOADING THE STRATEGY TO A VENDOR
EXTERNAL SEARCH
DOWNLOADING OF RECORDS
CONVERSION AND REFORMATTING OF RECORDS IN A FORMAT ACCEPTABLE TO THE LOCAL SYSTEM
LOCAL DATABASE SEARCHES

Fig. 2 Stages in the process of developing a local bibliographic database through downloading

We thus had to determine:

a) The technical feasibility of the project, i.e. the appropriate computer resources (particularly downloading and conversion software and programs).

b) The economic feasibility of the project, in comparison to possible alternatives (local creation, purchase, on-demand searches and selective dissemination of information (SDI)).

c) The legality of the project, taking into account existing regulations governing copyright.

The specific objectives of the "Local Database" module within ISIR were thus as follows:

- to act as a bibliographic database for all CWARC researchers and outside organizations working in the field of workplace automation;

- to avoid the horizontal and vertical recurrence of individual searches of outside information systems which, in the medium and long term, is a source of significant added cost;

- to serve both the retrospective and current information requirements of researchers;

- to provide input to the Documentation Centre catalogue for documents to be ordered (document identification, automatic transfer of reference without data entry, etc.).

1.3 Downloading - Definition and situation

The electronic information industry, which combines computer and telecommunications technology, has developed at an extraordinary rate since the early 1970s. The number of databases created since that time is an indication of the rapid growth in this new industry. The Directory of Online Databases listed 3,369 commercial databases in January 1987, as opposed to 400 in 1980 (Cuadra Associates, 1987, p. V).

Year	Number of databases	Number of database producers	Number of online services	Number of gateways
1979/1980	400	221	59	
1980/1981	600	340	93	
1981/1982	965	512	170	
1982/1983	1350	718	213	
1983/1984	1878	927	272	
1984/1985	2453	1189	362	
1986	2901	1379	454	35
1987	3369	1568	528	44

Table 1 Growth in the number of commercial databases from 1980 to 1987 (Cuadra Associates, 1987)

During the same period, hardware for access to the stored information has developed considerably. Ever more powerful microcomputers have flooded the market, featuring modem boards, larger memories and steadily decreasing prices. Database vendors could begin planning to attract the general public through microcomputers, as online database searches became universally accessible.

A microcomputer equipped with a modem and the appropriate communication software can thus be used to search an online database and store the product of the search locally, on floppy or hard disks. It is this transfer of data from a central computer to a microcomputer that is known as downloading, with the reverse process being termed uploading. In general, downloading is used to transfer bibliographic citations from an online database to a local microcomputer, while uploading is better suited to transferring search strategies prepared at the local level to an online database service.

A more explicit definition of downloading is given in a study carried out by Cuadra Associates in 1983:

> Downloading is the process by which users of online databases capture and store the results of online inquiries (e.g. citations, the full text of items, time series or data items) in local computer storage devices - either temporarily or permanently - for further computer-based manipulation or re-use of the data. (Klausmeier 1984, p. 149)

But why has downloading aroused so much interest among those working in the electronic information industry since the early 1980s?

There are a number of reasons why users of online search systems would want to download the results of a search (Wanger, 1983; Tenopir, 1983; Murr, 1984; Henry-Rousseau et al., 1986; Jameson, 1987a). They might wish to print the results of the search after a session, when the microcomputer is no longer logged onto the online service, in order to keep costs down, or they might post-edit the results of the search using added-value (front-end) software before printing them. The post-editing process allows users, for example, to correct typographical errors in commercial database material, eliminate fields that do not appear useful, manipulate, rearrange and transcribe into a single format citations from different databases, or eliminate duplicates. Once the data have been reformatted and printed, the downloaded file is normally deleted.

Users may also download the results of a search in order to integrate them into a local darabase after reformatting or converting to the structure or format of the database. Downloading thus replaces part of the data entry process in the local system, which translates into savings of time and money at the outset.

Moreover, data that have been downloaded, reformatted and integrated into a local database may be stored permanently and re-used without the additional cost of logging onto an online database. This use of downloading to create local databases has now become quite common (Savage, 1986). This type of use means that downloaded data can be re-used, thus depriving database producers of royalties derived from repeated consultation of their databases and host systems of income resulting from connection time with their system. It should be noted, however, that if a database is to be of any use, it must be updated regularly, and this means repeated use of the services of online databases and producers to add data to the local database.

The entire problem raised by the creation of local databases is thus at the heart of the debate on downloading, involving users, producers and database vendors (online hosts). All these parties have technical, economic and legal (copyright) questions that must be answered.

In our research project, we attempted to at least partially solve some of these problems by creating a local database using downloading. The study covered two phases:

Phase I (1986) - Preliminary studies and choice of instruments.

Phase II (1987-1988) - Downloading : pilot project.

2. PHASE I (1986) - PRELIMINARY STUDIES AND CHOICE OF INSTRUMENTS

2.1 Preliminary studies

Among the preliminary studies carried out in preparing the implementation of the ISIR system (SIRI, 1986) were:

- assistance in setting up the Documentation Centre
- study of levels of integration required in ISIR
- enhancing CWARC personnel awareness of project
- needs analysis
- preparation of corporate profile and interest profiles (SDI) of CWARC researchers and managers
- definition and proposed typology of workplace automation field (from a theoretical viewpoint and from that of CWARC researchers)
- analysis of relevant databases in the workplace automation field
- testing corporate profile in the most relevant databases chosen
- analysis and testing of GEAC and MINISIS systems

2.2 Proposed typology of workplace automation field - Theoretical viewpoint

The draft typology of the workplace automation field proposed on August 13, 1986 (Appendix 1), was intended to delimit CWARC's general area of interest and mark the boundaries and context of the corporate profile, i.e. the systematic, consolidated description of the information requirements of all CWARC researchers and managers.

The main question was whether we should limit the field of research to office automation or extend it to workplace automation, with some confusion being generated by the CWARC name itself.

Consultation of general works, glossaries and vocabularies on office automation revealed that the term "office automation", dating from 1977, is a neologism that is still somewhat vague as regards its definition, tools and applications. For Jean-Paul de Blasis, "office automation refers to assistance in office work obtained through means and procedures using information, telecommunications and administrative organization and, in general, everything that contributes to the logistics of the office and its environment" (de Blasis, 1982, p. 21).

Workplace automation, on the other hand, is a process of implementing technological applications in different work situations. The office is one of these, while others may be hospitals, laboratories, sales and distribution centres, manufacturing plants, construction sites, mines or farms. As of the summer of 1986, work being conducted at CWARC extended well beyond the strict confines of office automation, as defined by de Blasis, to other service activities, although stopping short of the field of robotics.

It was consequently agreed that, for our bibliographic research purposes, the research strategy should deal only with workplace automation in the tertiary sector or service industries and thus exclude robotics and computer-assisted manufacturing, which are more related to the production of goods, an activity characteristic of the primary and secondary sectors.

We felt it was of the greatest importance to clearly define our area of research, since the definition adopted had a direct impact on the mass of information retrieved and eventually downloaded. We thus began to develop the overall CWARC interest profile (corporate profile) based on a typology of workplace automation. This profile nevertheless proved difficult to develop, for a number of reasons. The workplace automation field is a relatively new one, and it is yet far from being clearly defined. The vocabulary, which includes many neologisms, has not yet stabilized. As well, certain concepts (human or social aspects) are difficult to delimit and present in information search strategies. The workplace automation field is a multi-disciplinary area drawing knowledge and applications from a wide range of related fields (computer science, economics, administration, psychology, sociology, etc.). It must be borne in mind that the purpose of the interest profile is to define the body of information needs and activities of CWARC so as to enable us to retrieve all and only relevant citations from existing databases. It is clear that such an objective can never be completely met, but we hoped this would allow us to collect most of the documentation available in this field.

2.3 Proposed typology of workplace automation field - User's viewpoint

Since the corporate profile also had to take into account the individual needs of researchers, we met with each researcher in two of the four CWARC directorates to draw up their individual interest profile. This activity

forms part of the selective dissemination of information (SDI) service of the ISIR service.

Activities related to the development of SDI profiles for the year 1986 are detailed in a report entitled Rapport d'activité - Diffusion sélective de l'information, presented in January 1987 (Carmel, 1987a).

We might stress here the benefit we derived from developing and testing individual interest profiles of researchers in the Organizational Research (ORD) and the External Collaboration Directorates (ECD) in familiarizing ourselves with the research conducted at CWARC and the treatment given to workplace automation by the various databases (the thesauri and controlled vocabulary lists of these databases were consulted in drawing up profiles). In addition, meetings with ORD researchers confirmed the definition of workplace automation we had adopted, since their interest profiles covered the various impacts of new technologies on the work environment, not just the impact of office automation, although the work environment most commonly studied remained the office.

Our search strategy was thus enriched by the addition of terms drawn from the various SDI profiles.

2.4 Commercial databases of possible interest for the CWARC mandate

Having defined the general interest area of CWARC, we examined the Directory of Online Databases published by Cuadra Associates, which in July 1986 listed 3,169 commercially available databases (Cuadra Associates, 1986).

We singled out the databases directly or indirectly related to the field of workplace automation, by type of database: numeric, factual, full-text,

bibliographic and software inventory databases. The results are shown in Appendix 2.

A file was set up, recording the characteristics of each of the 290 databases selected (topics, producer, vendor(s), period covered, etc.). These databases are distributed by 57 different online hosts, all of which were identified. Ten of them distribute 195 of the 290 databases identified (67%). These are listed in Appendix 3.

2.5 Bibliographic databases most relevant for the workplace automation field

Since the local database is essentially a bibliographic tool, we first selected bibliographic databases. Of the 58 bibliographic databases dealing specifically with workplace automation, identified previously, we had to choose the ones that best covered the field as we had defined it.

Using the database content description, we selected 23 bibliographic databases which seemed to cover the various aspects of workplace automation relatively well. These are shown in Appendix 4.

Seventeen of them are distributed by Dialog, and we thus decided, as a first step, to assess the coverage of the workplace automation field through the various databases distributed by this vendor.

We accordingly searched Dialog File 411, DialIndex, which permitted us to check the coverage of a given subject in the various databases. The results obtained by searching for the expression "office(W)automation" in the basic index of the 17 Dialog bibliographic databases selected as being relevant is shown in Appendix 5. In all, 20,496 references were retrieved using this strategy, of which 14,245 (69.5%) were in the ABI/INFORM, INSPEC and Computer Database bases alone.

2.6 Preliminary test of corporate profile - Search of 12 databases distributed by Dialog

Since we wanted the local database to cover all aspects of the workplace automation field (organizational, economic, social, technological, etc.) as defined in our typology, we had to extend the search strategy.

We thus chose 102 words and multi-terms in the workplace automation typology, the SDI profiles and the document Canadian Workplace Automation Research Centre - Overview (Canada, Department of Communications, n.d.) to obtain a good representation of the various research areas of CWARC. The search was limited to the title and descriptor fields in order to obtain an acceptable level of relevance. Databases were chosen on the basis of their coverage of various aspects of workplace automation (e.g. INSPEC - technology; ABI/INFORM - economic and organizational factors, etc.).

The results appear in Appendix 6. The code to the right of each expression refers to the main subdivisions of the workplace automation typology:

1. Technology

1.1 Information
1.2 Communication
1.3 Application areas

    1.3.1 Office systems
    1.3.2 Others

2. Economic factors

3. Organizational factors

4. Social factors

5. Human factors

6. Environmental factors

7. Development tools

Appendix 7 shows the total number of records obtained for each database searched as well as the percentage this represents of the total number of records in the database. It may be seen, for example, that our strategy would have retrieved up to 82.7% of the records in the ISA (Information Science Abstracts) database. This figure gives a quite misleading picture of coverage of the workplace automation field in this database, since certain terms searched out of context considerably inflated the total occurrences for certain databases (e.g. "gateway" and "interface" in INSPEC, "information storage" and "information retrieval" in ERIC, ISA and LISA, etc.). The search strategy used during downloading should have situated these terms in the context of workplace automation.

Appendix 8 shows the data from Appendix 6 classified according to the seven main subdivisions of the typology, with the number of records retrieved in each subdivision being expressed as a relative percentage:

$$\% = \frac{\text{Number of records retrieved by searching terms "x, y et z" of a given subdivision in base "a"} \times 100}{\text{Total records retrieved in base "a"}}$$

As of November 17, 1986, there were 716,629 records dealing with workplace automation as defined, in 12 bibliographic databases distributed by Dialog. At the time, we had no means of assessing the relevance of the records retrieved nor the redundancy between databases. To achieve this, we would have had to limit the search to one or two years and verify the relevance of records by evaluating them one by one, which would also have enabled us to identify citations that were repeated from one database to another.

In the final analysis, retrieving such a volume of information again raised the question of defining the workplace automation field, and encouraged us to better delimit our search strategy.

Appendices 8 and 9 clearly illustrate how well the technological aspects of workplace automation are covered by each of the databases searched (89% on the average). In his "iceberg" model" of office automation implementation, Mortensen stressed the fact that, "first, office automation planning should be at least 80% human resources/organization-based and only about 20% technology-based" (Mortensen, 1983). Oddly enough, the results of our search show the reverse: only 11% of records, on the average, deal with aspects other than technology. These results should be viewed with caution, however, given the unequal representation of terms searched for each typology category. It would seem that the research being conducted at CWARC (which deals with both the human and organizational impacts of workplace automation and new information technologies) is nevertheless valid, and that a local database that would pool documents published in the area of workplace automation would certainly be of interest.

The increase in documents published on office automation in recent years supports this latter statement. Appendix 10 presents the results of a search made by Mortensen in 1982 and repeated by us in 1986. It will be seen that there is an average increase of 429% in the number of records retrieved in the basic index of eight databases under the search expressions "office(w)automation" and "office(2w)future"! (Mortensen, 1982, p. 442)

Detailed results of all studies carried out during Phase I (1986) were presented in the Rapport de recherche intérimaire in February 1987 (Carmel and Deschatelets, 1987).

3. PHASE II (1987-1988) DOWNLOADING: PILOT PROJECT

When a search of twelve commercial databases distributed by Dialog enabled us to retrieve 716,629 records corresponding to the corporate profile as defined, we concluded that the cost of systematic downloading of such a volume of information would certainly be exorbitant.

It thus appeared essential to conduct a downloading test that would enable us to assess the technical feasibility of such a project even before we proceeded to review the corporate profile.

3.1 Downloading test

A pilot project was therefore set up to assess the technical, economic and legal feasibility of creating a local bibliographic database using downloading. It had initially been planned to conduct the pilot project on the twelve most relevant databases distributed by Dialog (Appendix 6), and downloading was effectively carried out on these 12 bases. However, the process of conversion and reformatting was only applied to three of the databases: Data Courier's ABI/INFORM, Computer Database from Information Access Co., and the IEEE INSPEC database. Dialog specifications of these three databases are presented in Appendices 17a, b, and c.

3.1.1 Technical aspects

3.1.1.1 Definition of needs and choice of interface software

Before choosing an interface software to allow consultation of external database services, downloading of the relevant documentary information and conversion of records into a bibliographic format compatible with the local system, we carefully defined our needs.

The chain of operations to be performed using interface software is as follows:

- local (offline) editing of search strategy
- automatic log-on to selected host system
- uploading strategy to host system
- downloading of results
- conversion of format of downloaded records to a common format compatible with the format used in MINISIS, the software used for database management in the ISIR service. Developed by the International Development Research Centre (IDRC), MINISIS operates on a Hewlett-Packard HP-3000 series mini-computer. This database management software has the ability to store, manage and efficiently retrieve data of varying lengths, which is a particularly attractive feature when managing textual data
- identification of duplicate citations

In its broadest sense, downloading does not only consist in transferring data from a mainframe computer to a peripheral, since this operation may be performed using a simple communication software program.

Converting downloaded data is of prime importance if they are to be included in a local database. The conversion capacity was thus the essential feature when choosing the interface software. It should be noted as well that a number of interface and even database management programs (with a "conversion" module) can be used to download records and reformat them into a local format. Our project however brought an additional dimension to this procedure, since the local format had to be compatible with the MINISIS system (Fig. 2).

Section III.11 of the MINISIS software manual provides complete details of the BATCH format (IDRC, 1986), into which records downloaded from various commercial databases must be converted if they are to be included in a MINISIS database using the BATCHIN function. This function is related to the ENTRY function insofar as it is used to enter records into MINISIS databases; however, it applies to data recorded offline, from files stored on HP 3000 disks. The results of this processing are automatically transferred to the MINISIS database chosen beforehand, the parameters of which are pre-defined.

We nevertheless give below the main characteristics of the BATCH format:

- Logical records or bibliographic citations must begin with a new physical record or line following the record identifier (IDENR) which must always appear at the start of a record, beginning at the 0 position.

E.g. !IDENR
!IZONE! Data...

- Field identifiers must begin and end with a marker which, in our case, is an exclamation mark.

- A physical record cannot exceed 80 characters, and each logical record is limited to 4,096 characters.

- Multiple occurrences of repetitive field must be identified individually, as one field may occupy several lines.

Programs considered during the evaluation of interface software were themselves database management programs (Edibase, Micro-Questel, Turbo-Biblio), and as such included programs to convert formats from online databases to their own format. It is not common to convert downloaded records into an interim format as rigid as the BATCH format to allow them to be uploaded into a local system. The specific programming steps required would render use of interface software relatively laborious and costly.

An evaluation of the three interface software was presented in the February 1987 status report entitled Test de télédéchargement : évaluation des coûts et choix d'un logiciel d'interface (Carmel, 1987b).

The software selected was Turbo-Biblio, a Quebec product designed and distributed by ASC Biblio-Information Inc.; this software best met our specific requirements, at the lowest cost. Q-modem Version 3.0, a shareware program produced by Forbin Project, Minneapolis, U.S.A., was chosen as the communications software.

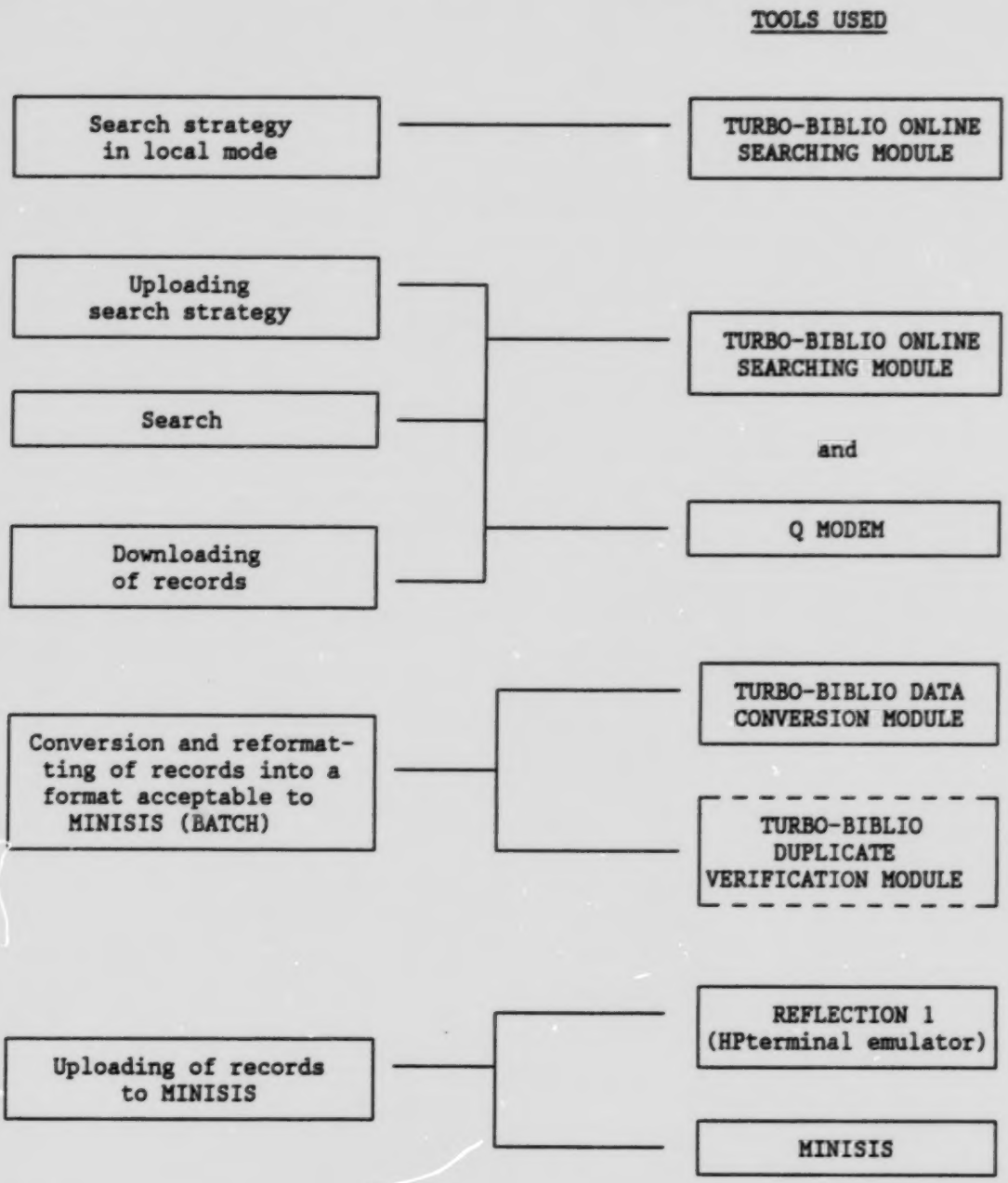


Fig. 3 Stages in the process of constituting a local bibliographic database and tools used.

3.1.1.2 Equipment

The downloading test was carried out using an IBM-compatible Panasonic Executive Partner equipped with a 10 megabyte hard disk and a modem board.

3.1.1.3 Interface program - Turbo-Biblio

a) online searching module

This module can be used to record search strategies and produce lists by code, researcher or administrative unit. This option is particularly attractive if we wish, for example, to draw up an interest profile for researchers in a given directorate.

A profile may extend over nine 14-line screens holding 75 characters each. The entry format allows for limited word-processing capacity featuring insertion or deletion of lines and automatic word wrap.

The profiles thus developed may then be uploaded in batch mode to the selected host system using a telecommunications software. For this purpose, we chose the option "F3 - Exportation" in the online searching module, which allows files to be exported using Smartcom, PC Talk, Crosstalk or QMODEM 3.0. Output files for export bear the extension .EXP. By downloading profiles, we save all the time required to input the online search strategy in interactive mode, thus reducing connection time to the host system. The telereference option of the external data processing module is thus useful both for routine telereference activities and for the local development of SDI (selective dissemination of information) profiles. These profiles may then be stored and uploaded to the host system in accordance with the update frequency of the database we want to search. A detailed description of features of the online searching module is given in the Turbo-Biblio software literature (ASC Biblio-Information Inc., 1986, pp. B.4.8 - B.4.11).

b) telecommunications software: uploading search strategies and downloading results

Q-modem 3.0 communications software permits automatic logon using a menu giving a choice of host systems, with logon scripts being pre-defined by ASC Biblio-Information.

Calling the file to be uploaded and disconnection have also been automated. Choosing the export function in the online searching module starts the uploading process by copying the name of the "export" file (e.g. Di130723.EXP) into the file containing the name of the host system (e.g. DI for Dialog) plus RECH (e.g. DIRECH), to be called up automatically once the script for logging on to that vendor (e.g. DI) is complete. The logoff script will be called using the vendor's code followed by EXIT (e.g. DIEXIT to call the Dialog logoff script).

The results of the search are automatically downloaded into "import" files" (e.g. Di130723.IMP), which may subsequently be called in Turbo-Biblio to be converted.

c) conversion module and dictionary module

To perform a conversion, we exit Q-modem, call Turbo-Biblio and choose the option "F3 - Data conversion" in the external data-processing module. Conversion per se is a technical operation performed automatically by the computer using a conversion program and rules. The conversion rules to render the formats of the various external databases compatible with the BATCH format are defined using the dictionary module. It will be recalled that the BATCH format permits the downloaded data to be entered in the local database defined in MINISIS.

Using the dictionary module, we can choose the characters that mark the beginning and end of a file and the beginning and end of a record. Defining these parameters eliminates the need to use a word-processing system to

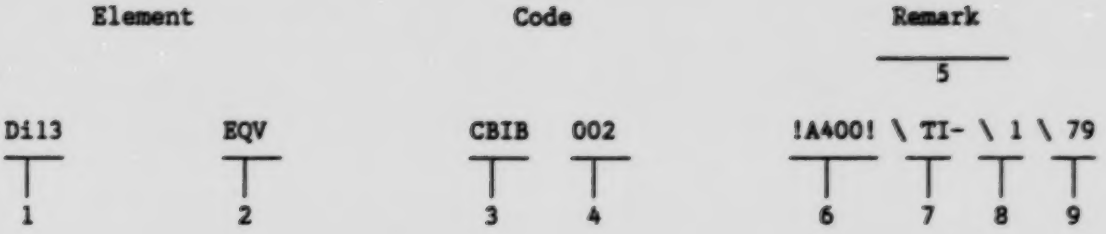
delete search commands and responses by marking exactly where the information to be converted begins and ends.

In addition, the dictionary module allows separation characters to be identified in a given field, allowing the field to be broken down into subfields. For example, descriptors are all grouped in one field (DE-) in Dialog databases, and it would be useful to break this field down into subfields so that once the field has been converted and uploaded to MINISIS, each of the descriptors can still be searched. If the descriptor field could not be broken down, it could only be searched word by word, and we would lose the information contained in phrase descriptors.

The line length of a record may also be specified, so that abstracts may be wrapped. The dictionary module is also used to define the equivalents of the field identifiers in the various databases of a given vendor to the corresponding fields created in MINISIS.

Since the basic dictionary module converts the various external database service formats to those of Turbo-Biblio, two days of programming were needed by the producer to complete the conversion of Dialog, CAN/OLE or Questel to the BATCH format. These programming stages are not visible to the user; however, the conversion rules may be changed at any time using the dictionary module.

Section A7 of the Turbo-Biblio software user's manual gives details on creating dictionaries; however, we have shown below the basic information that must be collected to prepare such a dictionary.



where: 1- Source base - here INSPEC, File 13 in Dialog (Code Di13)
2- Equivalence element
3- Destination database for records in BATCH format
4- Sequence number
5- The remark is composed of several segments separated by a backslash \
6- Destination chain
7- Source chain
8- Starting position for information collection after source chain
9- Number of characters to collect per line

If we refer to the INSPEC database conversion file (Appendix 13c), it will be noted that in the list of equivalents, the first allows the record identifier !IDENR to be entered at the beginning of each new record in the BATCH format.

The character chains that identify the beginning and end of a record are also specified (respectively RECDEB FN- and RECFIN), as is the character that identifies the end of a field (CHAFIN).

We should also mention the characters the software must find to begin the conversion process (RECRECHERCH /4/), thus eliminating the need to use word-processing software to delete system questions and responses in the downloaded file.

Separators were also identified for fields where we want the information to be broken down into different fields. In INSPEC, for instance, we ask that the semi-colon be considered as a separator for the fields Author (AU-), Descriptor (DE-) and Identifier (ID-).

Once the conversion dictionary is complete, we can convert downloaded files to the BATCH format. This stage is performed automatically in Turbo-Biblio, with a record taking 5 seconds to convert. This gives us a "destination" file (Di130723.DST).

When the files are stored in the BATCH format on the hard disk of an IBM-compatible microcomputer, all that remains is to upload the data from the hard disk to the HP 3000 disk using an HP terminal emulator program (Reflection 1). The BATCHIN function in MINISIS then enables us to transfer data from the HP disk to the local database previously defined in MINISIS. These final stages are carried out by the ISIR database manager.

Figure 4 summarizes the stages required to create a local database by downloading with Turbo-Biblio.

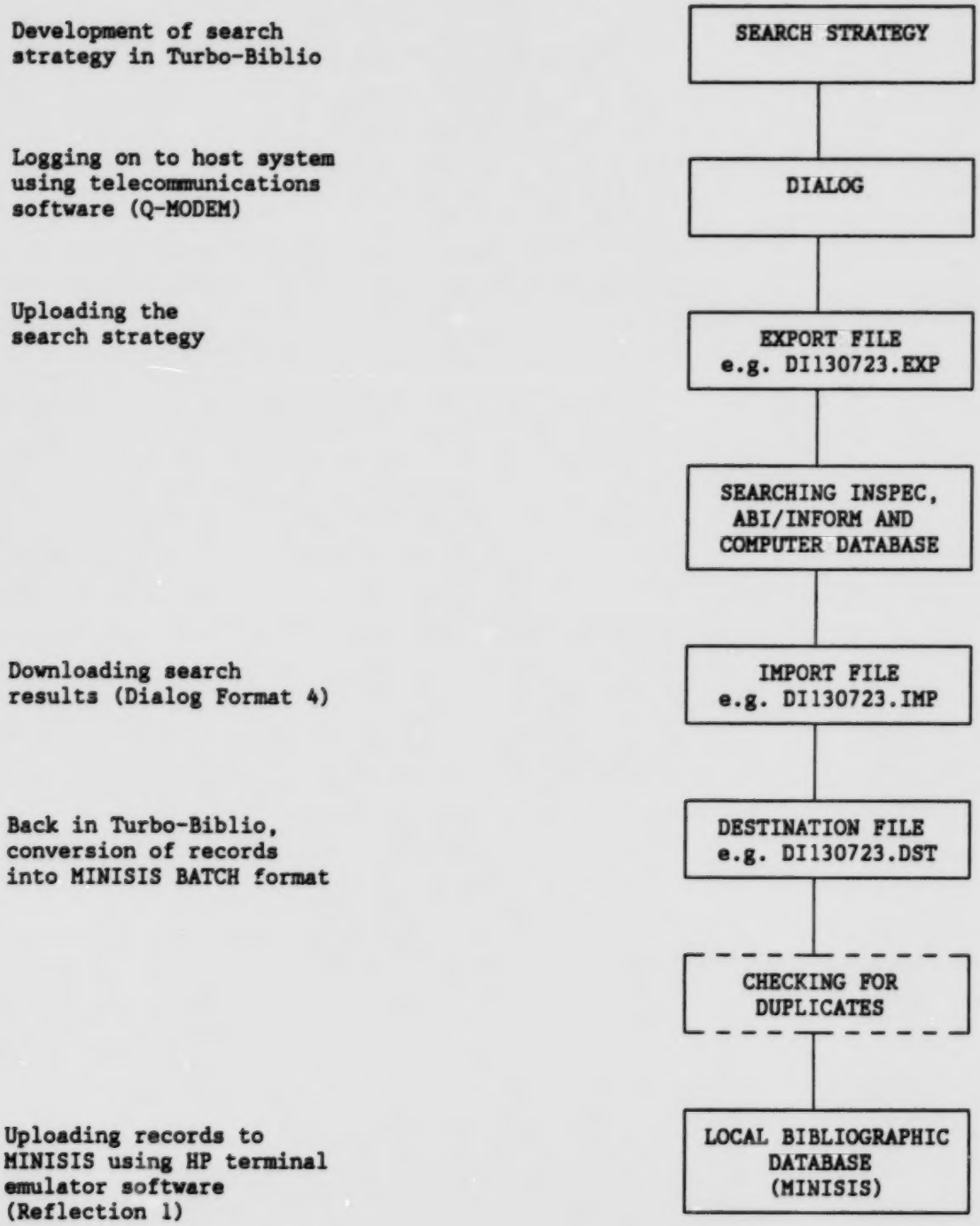

Development of search strategy in Turbo-Biblio
SEARCH STRATEGY
Logging on to host system using telecommunications software (Q-MODEM)
DIALOG
Uploading the search strategy
EXPORT FILE e.g. DI130723.EXP
SEARCHING INSPEC, ABI/INFORM AND COMPUTER DATABASE
Downloading search results (Dialog Format 4)
IMPORT FILE e.g. DI130723.IMP
Back in Turbo-Biblio, conversion of records into MINISIS BATCH format
DESTINATION FILE e.g. DI130723.DST
CHECKING FOR DUPLICATES
Uploading records to MINISIS using HP terminal emulator software (Reflection 1)
LOCAL BIBLIOGRAPHIC DATABASE (MINISIS)

Fig. 4 Creation of a local database using Turbo-Biblio and MINISIS.

3.1.1.4 Problems encountered

Downloading per se was carried out on the 12 bibliographic databases distributed by Dialog that had been identified in Fall 1986 as best covering the workplace automation field. We accordingly downloaded all records found under "office?(2N)automat?" in the title field, in 11 of these databases for 1985 and 1986 (Appendix 11). We omitted the ERIC database, for which Format 4 with field tags was not available.

For reasons of efficiency (time, cost), however, we did a complete reformatting exercise on only three of the twelve databases: ABI/INFORM, Computer Database and INSPEC.

Appendices 12 to 15 give examples of files downloaded from each of these databases (Import files - Appendices 12a, 12b, 12c), conversion files to convert the data downloaded from each of these databases to the MINISIS BATCH format (Appendices 13a, 13b, 13c), records from each of the databases converted to MINISIS BATCH format (Destination files - Appendices 14a, 14b, 14c) and records from each database as they appear after uploading to the ISIR MINISIS database (Appendices 15a, 15b, 15c).

Another Turbo-Biblio conversion file makes it possible to edit a bibliography using downloaded data (Appendices 16a to 16f). This is the most common use of conversion programs.

The Turbo-Biblio "duplicate verification" module was not ready at the time of the test, and could thus not be used in this project (Appendix 18).

These various examples clearly show that it is technically possible to create a local database at CWARC using downloading, notwithstanding CWARC's highly specialized computer environment.

We should nevertheless make some mention of the problems encountered in the course of this project in order to arrive at a fair estimate of the time and resources required to carry out such a project.

Writing conversion files is unquestionably the critical stage in the data reformatting process, since the conversion dictionaries define the rules governing conversion of data into a form that can be digested by MINISIS.

For each of the databases considered, we had to set up an equation between the fields of the downloaded records and fields already existing in MINISIS (Appendices 19a, 19b and 19c). Apart from the title (A400), ISBN (A240) and ISSN (A260) fields, all other fields had to be created in MINISIS since there was no formal equivalent to them in this system. The "author" field was thus made up of "family name" and "first name" sub-fields in MINISIS, whereas the surname and name or initial were both in the same field for the databases studied. It is important to allow for long enough fields when defining new fields in MINISIS, as well as repetitive fields if required.

We also had to pay particular attention to fields corresponding to the various types of documents that might be included in a given database. For instance, Computer Database and INSPEC have specific fields for conference proceedings (CT-Conference Title, CL-Conference Location, etc.). It is thus necessary to go through all the downloaded records to provide for all cases. If a field is not adequately identified, conversion could not be performed normally, since the system would find no equivalent for this field in the conversion file.

A number of problems arose when developing conversion files. We could not help but observe the lack of uniformity in the presentation of bibliographic records from one database to another, even when they were distributed by

the same vendor (Appendices 12a, 12b, 12c). We even saw a lack of consistency in a single database where the same field label was given to two different fields (e.g. in Computer Database, we found CO-Coden and CO-Company name). In the lines that follow, we describe some of the problems encountered in developing conversion files.

The end-field character (¦) typical of Dialog Format 4 did not systematically appear to mark the end of a field. It did not appear at the end of the "Access number" (AN-) and "Descriptor" (DE-) fields in the record downloaded from INSPEC (Appendix 12c). The Turbo-Biblio designer thus had to allow for special programming for the databases distributed by Dialog to add the end-field character when it did not appear in the record to be converted. The same process had to be applied to add the end-record character (¦¦) in databases where it did not appear (ABI/INFORM, Computer Database - Appendices 12a and 12b).

Special programming was also needed to apply the separator to three different fields, whereas the initial program allowed a separator to be applied to only one field.

Database producers also change separator characters without notice. Over a three-month period, the separator in the AU- and DE- fields changed from a circumflex accent to a semi-colon in records on ABI/INFORM. Changes of this type mean that users must take the time to correct their conversion files.

The user must also remember to define the fields on which separators are applied as repetitive fields in the target database (MINISIS). If this were not done, the system would report an error when uploading files.

The presence of exclamation marks in the text of records converted to the BATCH format posed a problem when uploading files to MINISIS, which confused these exclamation marks with the exclamation marks for the beginning and end of field identifiers in the BATCH format. The Turbo-Biblio designer had to provide special programming to transform all exclamation marks into periods in records to be converted.

These are but a few examples of the difficulties involved in writing conversion files. It was only through close cooperation with the software designer and a great deal of time spent by both parties that the project could be successfully completed. The fact remains, however, that the pilot project only proved that we could convert three specific databases distributed by Dialog. We suspect that developing conversion files for other databases distributed by Dialog or other vendors would reveal even more problems.

3.2 Legal aspects

Users who download the results of their online searches without authorization from the producer of the database searched may risk breaking the American law on copyright (U.S. Copyright Revision Act of 1976) if the downloaded data is covered by copyright. Although the 1976 law does not specifically deal with databases, and to date no court has brought down a decision on the legal status of downloading, lawyers studying the question of copyright believe that databases are protected by copyright in the same way as printed works (Warrick, 1984; Jameson, 1987b). Public domain databases would be an exception to this rule.

It is clear that downloading a complete database would violate copyright law, but what about the current practice whereby a user downloads only a portion of a database?

The interests involved make the problem more acute. Database producers use royalties received for online consultation of their databases through online hosts to develop and update the databases. Users who download the results of a search and create a local database may search it without having to log on to a host system. Since users do not pay for connection time, both vendor and producer are deprived of substantial revenues (Williams, 1985, p. 455).

3.2.1 Definition of copyright

Since two of the databases we looked at were created by American producers (ABI/INFORM and Computer Database) and all three were distributed by an American vendor (Dialog), we took a closer look at American copyright legislation.

The authors consulted (Jansen, 1984; Warrick, 1984; Beard, 1985; Gray, 1985; Tenopir, 1985; Jameson, 1987b) all consider that the question of copyright is highly complex, and it is difficult to grasp all the nuances without a good knowledge of the text of the law.

Let us nevertheless attempt a rough outline of the question. Gray (1985, p. 316) gives the following definition of copyright: "Copyright is the right of authors to prevent other people copying an original work which they themselves have created... the essential point is that the work is original."

A more formal definition may be found in Section 102 of the U. S. Copyright Act (or 17 USC):

> Copyright protection subsists... in original works of authorship fixed in any tangible medium of expression, now known or later developed from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device... (Quoted in Mortensen, 1984, p. 337).

For Warrick (1984), since the content of databases is recorded on disks or magnetic tape and can be read using a device, databases correspond to the definition of Section 102, and copyright may be applied to them. However, the database producer who wishes that database to be copyright protected must clearly indicate this in the base itself, or even in each record (Beard 1985, p. 63).

3.2.2 Legal aspects of downloading

"Downloading is technically a violation of the copyright of the database producer" (Jansen 1984, p.4; Gray 1985, p. 316). However, a user who has downloaded results and has been accused of a breach of copyright law might use the principle of "fair use" as a defense.

The conditions under which "fair use" applies are detailed in Section 107 of the American copyright law:

> The fair use of a copyrighted work... for purposes such as criticism, comment, news, reporting, teaching (including multiple copies for classroom use), scholarship, or research is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include:
>
> 1) the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes;
>
> 2) the nature of the copyrighted work

> 3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
>
> 4) the effect of the use upon the potential market for or value of the copyrighted work (quoted in Warrick, 1985, p. 63).

Decisions regarding fair use are not universal, but are based on the merits of each case. Beard (1985) and Warrick (1984), both lawyers, present a detailed analysis of decisions handed down on "fair use", some of which appear contradictory.

There does not, however, appear to be any jurisprudence that has force of law with respect to fair use in cases of downloading, since no decisions have yet been rendered in this area (Jameson, 1987).

A survey conducted by the journal Online among database producers in 1986 (Garman, 1986) reported that, while producers wish to have copyright protection, most of them accept downloading for limited use or distribution within an organization, considering that this constitutes fair use. This does not hold true, however, in the case of downloading to create local databases. Even the most flexible downloading policies require the user to sign a written agreement with the producer and pay an additional fee for each record downloaded.

3.2.3 Legal considerations for the project

Downloading is not nearly as controversial an issue as it was two years ago. Database producers are now much more interested in developing media for the storage of large volumes of information (CD-ROM). We nevertheless wrote to the producers of the three main databases studied (ABI/INFORM, Computer Database and INSPEC) to determine their policies on downloading.

UMI/Data Courier, the producer of ABI/INFORM, advised us (Appendix 20) that they authorize downloading at no additional cost, provided written permission is obtained. The user must, however, undertake not to create a local database that would give repeated access to downloaded records with no additional connection charges. This producer also advised us last August that the ABI/INFORM database should soon be available on compact disc (CD-ROM). ABI/INFORM is now distributed on compact disc at a price of $US 4 950. The ISIR service will thus have to determine whether the number of searches of this database would justify the initial purchase price of the compact disc and the cost of annual updating.

Information Access Company, the producer of Computer Database, took some time replying to our request (Appendix 21) for its downloading policy. They advised that they tolerate downloading records from their database by individual users on a one-time basis, and that their pricing policy took this practice into account. They nevertheless make a clear distinction between re-use and re-sale, the latter practice being unacceptable under any conditions. They also encourage their institutional clients to purchase their databases for local use. Access to Computer Database on tape costs $US 9 000 per year, plus $US 16 000 for the backfile. This producer does not have a CD-ROM version of Computer Database at the present time.

The Institution of Electrical Engineers, producers of the INSPEC database, has the most elaborate downloading policy (Appendix 22). They distinguish three use categories: A) temporary storage, B) long-term storage and re-use at the downloading site, and C) other uses (e.g. multiple copying, resale, etc.). For Category B, which would be of most interest to us, the cost is $US 0,32 per record for internal use, with a minimum of 300 records. This producer has no plans to produce the database on compact disc, but sells sub-files from its database on tape. The sub-file most likely to be of interest to CWARC is Information Technology, available at a cost of $US 2 000. The complete database costs $US 18 600 per year, and backfiles are approximately $US 35 000; updating is monthly or bimonthly.

The downloading policies and regulations of these three producers yield some significant considerations for our project:

1- An agreement must be negotiated with each producer.

2- Systematic downloading must be done with a view to internal re-use and access would thus be free for CWARC "clients"; "internal clientele" would have to be defined (narrow definition: CWARC, or broad: Department of Communications, Public Service, or other).

3- In almost all cases, there would be extra costs (in addition to communication, connection and printing charges) to download records, and these would have to be determined (or negotiated) according to the specific characteristics of the project (number of records, re-use, value added to records, etc.)

Systematic creation of the database by downloading could only legally be done under certain specific (even restrictive) use conditions. As well, the economic impact of the process must be carefully weighed.

3.3 Economic aspects

3.3.1 Downloading costs

Appendix 11 gives the downloading costs for the eleven databases queried. Factors considered were:

1) Online search costs taking into account the hourly search rate for each database involved, at a transmission rate of 1200 baud.

2) Telecommunications costs (Telenet), which in March 1987 were $US11/ hour.

3) Printing costs for records printed in Format 4, this being the only format that permits display of the field tags essential for converting records into the BATCH format compatible with MINISIS.

4) Working time required to effect the downloading, assuming an annual salary of $CND 30 000 (i.e. $CND 16/hour or $US 10,40/hour at an exchange rate of 35%); however, we did not take into consideration the time needed to prepare conversion dictionaries, do the actual conversion, etc.

5) Royalties payable to the producer for downloading records from a database the producer considers to be copyright-protected. We only had this figure for INSPEC; however, in the actual project, this additional charge should be included for all databases where applicable.

The average cost calculated for downloading one record, given the parameters mentioned above, is $US 1,47 or $CND 1,98 (for all 12 databases listed in Appendix 11).

We felt it would be more realistic to look instead at the average downloading cost per record for the three main databases studied: ABI/INFORM, Computer Database and INSPEC.

These were the databases in which we found the greatest numbers of records, enabling us to calculate a more reliable average cost than if we had found only 3 records (e.g. LISA).

	Average Cost per record ($US)	($CND)[3]
ABI/INFORM	1,68	2,27
Computer Database	1,52	2,05
INSPEC	1,39	1,88
	X = $US 1,53 ± $0,14	$CND 2,07 ± $0,19

We should point out that ABI/INFORM is the database with the highest online unit printing cost ($US 0,68); moreover, records from that database include approximately 200-word abstracts, which has an effect on downloading time.

It should be noted also that connection and telecommunication times vary considerably depending on demand at the time the search is made and the response time of the host system. We also observed that the communications software used influenced the time to log on to the host system and thus the cost of downloading. In five downloading tests conducted on October 3, 1987, using Q-MODEM communications software and the GEAC system (CWARC OA application software) Datapac connection, we demonstrated that it is 16% more expensive to use Q-MODEM, rather than GEAC, to download five records from ABI/INFORM (average cost of $US 6,71 to download 5 records using Q-MODEM compared to an average cost of $5,78 to download 5 records from the GEAC system).

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[3] Exchange rate: 35%.

The average cost of $CND 2,07 to download one record is thus highly dependent on the communications software used.

In addition to downloading costs as such, we must take into consideration costs due to the time/person required to convert the downloaded records into the BATCH format compatible with MINISIS.

All operations related to conversion were developed as part of the downloading pilot-project and are thus technically feasible at this time.

If there are no hitches, the entire conversion process could be done automatically and would take approximately 5 seconds to convert one record into the BATCH format, assuming the person doing the conversion was familiar with the Turbo-Biblio software.

The file would then have to be transmitted to the ISIR service database manager, who is responsible for transferring files to the HP disks using the Reflection 1 program and uploading the data to the ISIR database in MINISIS (1 minute's work per record).

It will be recalled that conversion files to transfer Dialog files to the MINISIS BATCH format were only created for ABI/INFORM, Computer Database and INSPEC for the purposes of the downloading pilot project. If we were to download records from other databases, it would take at least 3 days' work to create and perfect each additional conversion file in Turbo-Biblio.

We must also consider the hours required to re-index each record using the thesaurus developed for the ISIR service. If we want to integrate the various databases stored in MINISIS, we must be able to search them using a single indexing language. It would take approximately <u>five minutes' work</u> to re-index each record.

This means a total of about 7 minutes would be required to make the conversion (5 seconds[3]), upload to MINISIS (1 minute[4]) and re-index one bibliographic record (5 minutes[5]), including all the intermediate operations (logging on to the vendor system, connection to Turbo-Biblio, copying files, etc., or about 55 seconds[6]). At an hourly rate of $CND 16,00/hour, the cost of these operations would total $CND 1,87/record.

We thus estimate at $CND 3,94 ($CND 2,07 + $CND 1,87) the cost related to downloading and all the operations required to reformat a record downloaded from Dialog, converted and uploaded to MINISIS.

The time required to prepare conversion dictionaries is not included in this cost. If we estimate three working days at 7,5 hours to prepare each of the conversion dictionaries from ABI/INFORM, Computer Database and INSPEC, the total cost would be $CND 1,080 (9 days X 7,5 hours/day X $CND 16/hour). Breaking down this cost by the number of records converted using these dictionaries, we would obtain an additional cost per record of $CND 1,71 ($CND 1,080/(355 + 132 + 143)).

The cost involved in all the above-mentioned operations would thus be $CND 5,65 per record.

3.3.2 Comparison of alternatives

It is difficult to express in absolute terms the significance of a downloading cost of $CND 5,65 per record. It is only by comparing the costs, advantages and disadvantages of this means of accessing information to other modes of access that we will be able to adopt a position.

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[3] Timed with Turbo-Biblio
[4] Timed manually
[5] Time estimated by CWARC indexers
[6] Timed manually

Apart from downloading, we might consider three other means of accessing the information contained in a bibliographic database:

1- Create the database from scratch, i.e . inventory, scan, analyse and index available documentation on workplace automation (periodicals, monographs, reports, theses, conference proceedings, etc.); input this information locally, manage it and render it accessible (with a system, database management software and search language) internally and, if appropriate, externally.

2- Purchase any databases relevant to the field on optical disc (CD-ROM) or tape and provide access (with a system, commercial database management software and search language)

3- Search external databases according to each user's need and demand and provide users with a selective dissemination of information (SDI) service.

Table 2 provides a comparison of the advantages and disadvantages of each option.

Description	Local Creation	Purchase	On-Demand Research and SDI	Downloading
Average cost per relevant record	$CND 4,70	Separate databases: $CND 0,85 Databases integrated with ISIR: $CND 2,72	Backfile: $CND 2,07 SDI: $CND 0,80 Total: $CND 2,87	$CND 5,65 (pilot project) $CND 3,94 (actual cost)
Database coverage	Only on workplace automation and other subjects of interest to CWARC	Since there are no databases on office automation and workplace automation, we would have to purchase all databases potentially relevant to this field (N=58)	There is no in-house database. Each researcher has retrospective searches done as needed and subscribes to a personalized SDI service.	Only on workplace automation and other subjects of interest to CWARC.
Equipment required	- minicomputer - database management systems (DBMS) - terminals or micros with modems and communications software (consultation)	- minicomputer - tape driver - compact disc drive - micros (input programs) - DBMS - terminals or micros with modems and communications software (consultation)	- terminals or micros with modems and communications software (consultation) - conversion and reformatting	- micros with modems and and communications software (consultation, down-loading) - conversion and reformatting software - mini-computer - DBMS - micros or terminals (consultation of local databases)

Table 2 Comparison of modes of access to bibliographic information in a database

Description	Local Creation	Purchase	On-Demand Research and SDI	Downloading
PRODUCTS Uniform, integrated bibliographies	yes	no	yes (for each researcher with appropriate communications software)	yes
Lists, reports	Depends on local system	no	no	Depends on local system
Availability of documents found	yes (but not necessarily)	not necessarily	not necessarily	yes (but not necessarily)
Users	researchers	intermediaries	intermediaries	researchers
COMPATIBILITY Single indexing language	yes	no	no	yes (if value added to each record)
Single search language	yes	no	no	yes

Table 2 (cont'd.)

Description	Local Creation	Purchase	On-Demand Research and SDI	Downloading
Updating frequency	Depends on CWARC	Depends on each database producer (tapes = often monthly) (CD-ROM = often quarterly)	Depends on each database producer AND each host system	Depends on each database producer AND each host system AND CWARC
OPERATING COSTS Yearly subscription	no	yes	yes	yes
Communications + connection + printing	no	no	yes	yes (for creation of database) no (for operation of database)
Conversion and reformatting	no	reformatting (occasionally)	no	yes
Value added (analysis, indexing)	yes	no	no	yes

Table 2 (cont'd.)

Description	Local Creation	Purchase	On-Demand Research and SDI	Downloading
SERVICES Retrospective searches	yes	yes	yes	yes
SDI	depends on local system	yes (additional cost)	yes	depends on local system (no on MINISIS)
Online document ordering	depends on local system	no	yes	depends on local system
Possible integration with other local systems (SIRI)	yes	no	no	yes

Table 2 (cont'd.)

3.3.2.1 Local creation

The average cost of an original record, i.e. one created from scratch by CWARC indexers, is estimated at $CND 4,70. This was calculated as follows:

cataloguing and indexing: 15 min/record X $16/hour (salary) = $4,00/record

data entry: 100 entry sheets/day (7 hours) X $10/hour (salary) = $0,70/record

The features of locally created databases are:

- all citations in the database are directly or potentially relevant for CWARC researchers; only citations which appear likely to be useful are selected, and there is thus a pre-selection by indexers on their perception of relevance.

- In general, indexing is done with the document in hand, and all documents in the database are thus available at CWARC.

- There are a number of important decisions to be taken regarding editorial policy (choice and scanning of documents, follow-up, exhaustivity), indexing policy (breakdown and parameters of the database, type of analysis and indexing, vocabulary, thesaurus, file and/or classification scheme), data entry and computer processing policy (choice of software, validation, search language) and system documentation.

- It is relatively simple to integrate the databases with other ISIR modules and thus render the system compatible. There will be only one indexing language and one search language for all modules.

- Given CWARC's activities, this could be done fairly easily by the ISIR service on a limited basis (e.g. scanning documents in the Documentation Centre); however, to build up a local database equal to the three databases studied (ABI/INFORM, Computer Database and INSPEC), we would have to systematically go through nearly 5000 journals and add over 300,000 references to the databases annually.[7]

3.3.2.2 Purchase

The second way to obtain the desired information is to purchase databases, either on optical disc (CD-ROM) or magnetic tape.

Financially, this is probably the least costly solution in the medium and long term. In our pilot project, for example, we estimated the total cost per relevant record, for the three databases studied, at $CND 0,85 if each of the databases purchased were searched separately, and $CND 2,72 if they were integrated with ISIR.

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[7] ABI/INFORM: 680 journals scanned
42 900 new records added each year
COMPUTER DATABASE: 140 journals scanned
20 000 new records/year
INSPEC: 4 000 journals (+ 1 000 conference proceedings) scanned
240 000 new records/year

These costs were calculated as follows:

$$\frac{\text{total purchase price (current year + backfiles) of each database}}{\text{number of relevant citations in each database}}$$

The total purchase price is set by the producer of each database:

ABI/INFORM: $US 4 950 (last 5 years, 6 updates/year)
(on CD-ROM)

Computer Database: $US 9 000 (current year)
+$US 16 000 (backfile)
(on tape)

INSPEC: $US 18 600 (current year)
$US 35 000 (backfiles)
(on tape)

The total number of citations is obtained from online hosts catalogues. For comparison purposes with the other alternatives, however, we used the number of relevant (or potentially relevant) citations as determined in our search strategy (Section 2.6 and Appendix 6) at the time our preliminary corporate profile was tested. The figures were 63 497 for ABI/INFORM, 83 776 for Computer Database and 215 514 for INSPEC.

The unit cost per relevant record[6] for each database was thus:

for ABI/INFORM: $CND 0,11

Computer Database: $CND 0,40

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[6] Exchange rate calculated at 35% for conversion to $CND.

INSPEC: $CND 0,34

Since we must buy the three databases to obtain the equivalent of records created or downloaded, we must add the unit costs per relevant record for the three databases, giving us a unit purchase cost of $0,85 per relevant record. If we also want to integrate these three databases to ISIR, this would require some additional conversion and re-indexing. The cost of this work has already been estimated (Section 3.3.1) at $CND 1,87 per record. The total cost of a record purchased and integrated into SIRI would thus be $CND 2,72.

Some of the features that should be mentioned with respect to this approach are:

- Since there is no database dealing exclusively with workplace automation (or even office automation), we would have to purchase all the databases that would be likely to cover some aspect of this field, or at least choose some of the main one, and we determined that there were 58 commercial databases that were directly related to the field of workplace automation...

- Given the above, purchasing a database means that some proportion of the citations available will not be of interest to CWARC researchers. As opposed to the first solution (local creation), there is no preliminary judgement on relevance when choosing the citations to be included in the databases, or at least this decision is not made by CWARC but rather by the producer of each database and according to other criteria than merely CWARC's specific needs. This means that more work must be spent on the search. For example, if we consider the total number of citations in the 3 databases used in the project and the number of relevant citations (as determined previously), we can see

that these relevant citations would constitute (Appendix 7) only 12,7% of the total database for INSPEC, 21,1% for ABI/INFORM and 52% for Computer Database. We would thus be paying for citations that we would know were irrelevant, although this would allow for a certain amount of "browsing". CWARC research areas are in any case very dynamic, and new fields are constantly being explored.

- All these databases cannot be linked into an integrated system without some problems and without considerable conversion and reformatting. All the databases have different formats, and fairly elaborate (and costly) conversion programs will be needed to integrate them to MINISIS and ISIR. As well, each database has its own indexing language (vocabulary and descriptors), and each record would have to be re-indexed (using the CWARC thesaurus) in order to avoid chaos on retrieval.

- All documents reported in these databases will not automatically be found in the Documentation Centre, and there will be an increased demand for interlibrary loans.

- Databases are generally purchased in the form of a subscription, with backfiles and regular updates. In the case of tapes, these updates must be regularly "integrated" into the existing file (involving conversion and reformatting, plus total re-indexing of the database several times a year). In the case of CD-ROMs, the problem is even more acute, since the databases and updates are normally sold by annual subscription, in the form of re-issues (normally quarterly). The entire database is then simply replaced with each update (with the old disc either being thrown away or, more often, returned to the producer). For all practical purposes, this means that we are constantly paying for the same information (the only original information being the update). There are also still a number of problems encountered in searching CD-ROMs:

standardization of equipment and discs (all databases cannot be read on all equipment), the fact that several users cannot simultaneously search the same database, severe searching limitations, different search languages, etc.

3.3.2.3 On-Demand searches and SDI

Another alternative to downloading is not to create or acquire a local database, but rather to search external databases in response to need and demand. This solution may also involve systematic updates (or selective dissemination of information) to each researcher.

Curiously, this solution takes us back to square one. If we create or acquire one or more databases locally, it is precisely to avoid the burdensome multiplication of outside searches that are often redundant both vertically (one researcher often obtains and pays for the same citations from different searches) and horizontally (several researchers obtain and pay for the same citations in their respective searches). When we consider that we are paying an average of $CND 2,87 per relevant citation retrieved in this way, it is only logical that we would try to eliminate duplication.

The average cost of $CND 2,87 was obtained as follows:

For retrospective searches

for each of the three databases studied, the total costs of consultation, communication and printing were:

ABI/INFORM: $CND 2,27

Computer Database: $CND 2,05

INSPEC: $CND 1,88

or an average of $CND 2,07 per record retrieved.

For automatic SDI service

From April to September 1987, 42 SDI profiles registered with ABI/INFORM gave eight users of the ISIR service access to 959 citations. At a unit cost of $US 9,95 per profile for 25 citations and an additional cost of $US 0,68 per record for all records over 25 retrieved per month, the cost would be $US 562,06 for 959 citations ((42 X $9,95) + (212 records over 25 X $US 0,68)), and the average cost per record is thus $US 0,59 or $CND 0,80.

The main features of this option are:

- Risk of horizontal and vertical redundancy in data purchased.

- Dependence on resources outside CWARC.

- Lack of a unified database on workplace automation, obliging each researcher to consult a number of databases.

- Presents the advantage of directly meeting the individual needs (both one-time and recurring) of each researcher. In this way, all expenses are in response to a real demand.

- Due to the diversity of databases and online hosts and the lack of standardization or user-friendliness in indexing and search languages, it is often difficult for researchers to consult a database on their own. In most cases, they must work through a ISIR service specialist who acts as an intermediary.

- Documents reported to researchers cannot necessarily be found in the Documentation Centre, and there will thus be an increase in requests for interlibrary loans.

3.3.2.4 Downloading

Creating a database by downloading is the solution studied in this project. The average cost per relevant citation downloaded and subsequently uploaded to MINISIS was estimated at $CND 5,65 for the pilot project. As explained in section 3.3.1, this cost can be broken down as follows:

a) $2,07 for downloading (consultation, communication, printing)

b) $1,87 for conversion, uploading to MINISIS and re-indexing

c) $1,71 for developing conversion dictionaries

Part of this total of $5,65 must, however, be weighted according to the number of citations downloaded. Thus while the $2,07 and $1,87 costs recur and will apply to each record throughout the process, the unit cost of $1,71 was calculated for a relatively limited number of citations (630) for the pilot project, whereas in practice it would be allocated to the total number of citations downloaded from each database. In the medium and long terms, it would diminish to the point where it would basically be negligible. In actual fact, then, the average unit cost of each citation in our local database created by downloading would be closer to $3,94 (items a + b).

The main features of this solution are:

- We would have to take into consideration the time required to produce conversion dictionaries for each new database searched and for each

new online host consulted. We would also have to regularly do online searches of commercial databases in order to update our local database; however, we would not have to input references retrieved from the local database, and we would obtain an abstract for each downloaded record. If we want to integrate this database with ISIR, we would still have to re-index each record in the local indexing language (thesaurus).

- The database thus developed is truly integrated, that is, it becomes an original database on workplace automation. Like local creation, this solution means only selecting for inclusion in the database those citations that are relevant and potentially relevant for CWARC researchers (predetermined relevance).

- All documents reported in these databases will not automatically be found in the Documentation Centre, and there will be an increased demand for interlibrary loans.

- The database can be integrated with ISIR, which will considerably increase ease of user access.

4. CONCLUSIONS AND RECOMMENDATIONS

The Integrated Service of Information Resources (ISIR) we proposed to create at CWARC (Fig. 1) would draw much of its information resources from a bibliographic database on workplace automation. Since such a database did not exist, either commercially or privately, we had to create it.

Various alternatives were available to us to meet the information needs of CWARC researchers: create the database locally by analysing and indexing documents relevant to the field; purchase the databases most relevant to the field and search them locally, either separately or in an integrated fashion; not create a database but rather make bibliographic searches and SDI profiles on demand, from outside systems; or create a local database by systematically downloading relevant bibliographic citations from outside databases and reformatting them to make them compatible with the other elements of the local system (MINISIS).

We chose the last-mentioned approach for our study, analysing its technical, economic and legal feasibility; however, it was by comparing the results of this analysis with the other possible solutions that we arrived at the conclusions that follow.

Our feasibility study is based on the hypothesis that creating a local database by downloading was technically feasible, economically advantageous and legally acceptable.

From a technical point of view, we determined that this process is entirely feasible, but it requires an enormous amount of time and effort to create, adapt and refine the instruments necessary to achieve it. What is a relatively simple operation when we download citations to reformat them according to the parameters of the software used (Turbo-Biblio) becomes a highly complex and laborious process when it comes to reconverting the citations and uploading them to another local system (MINISIS). The format of each database consulted and each online host must be adjusted to meet the

requirements of MINISIS. This involves creating several conversion dictionaries (one for each database) and lengthy verifications to correct the many errors in interpreting by the system. Not only do formats vary considerably from one database to another, but we even discovered that they may vary within a given database (e.g. two different fields with the same mnemonic code!), and this using only one online host. This entire operation thus necessitated developing special programming to allow each database to be transferred from Turbo-Biblio to MINISIS. This was unquestionably the longest and most delicate part of the process.

Another major problem we were faced with was the absence of a uniform, standard indexing language at CWARC. In fact, this language was developed too late to be of use to us in re-indexing citations in the pilot project and carrying out the search tests we had planned. There was a long period of uncertainty at CWARC as to the tool that should be developed to facilitate indexing (and retrieving) documents for the various ISIR modules. The various systems proposed were a controlled vocabulary list, a classification plan, a systematic approach and a thesaurus.

From an economic viewpoint, we saw that downloading is an entirely acceptable solution when we compare it to the costs, advantages and disadvantages of other alternatives, at least in the medium and long term. In the short term, what pushes costs up considerably is the creation of the many conversion dictionaries and files. In a full-scale project (716 629. records), this would be a fairly high initial investment (over $4 million).

One of the main problems we constantly encountered was the difficulty for CWARC researchers and managers to clearly define their areas of activity and interest. Was it office automation or workplace automation? The frontiers between the various fields of application and their theoretical bases (from a documentary viewpoint) made it extremely difficult to break down our search strategies.

From a legal standpoint, the freedom allowed by producers in re-using downloaded information is fairly limited. Copyright on information contained in databases exists and must be negotiated in each case. Producers are quite reluctant to see downloaded information re-used on a large scale, and resale is systematically prohibited.

Thus a bibliographic database on workplace automation could only be created by downloading at CWARC for internal use, after the expenditure of considerable time and effort and a fairly high initial investment.

In our opinion, there are too many risks involved for us to recommend this solution. We would opt instead for a satisfactory combination of the four solutions envisaged:

- local creation of a mini-database of documents held by CWARC (Documentation Centre catalogue, internal reports)

- selective purchase of the principal bibliographic databases on CD-ROM

- bibliographic searches on demand, using outside databases and the automatic SDI service

- selective creation, by downloading, of individual files or personal databases by researchers who express interest in this method.

Most of these services already exist and are, quite appropriately, provided by the ISIR service.

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APPENDICES

APPENDIX 1

Proposed Workplace Automation Typology

Proposed Workplace Automation Typology

1. Technology

    1.1 Information
    1.2 Communication
    1.3 Application areas
        1.3.1 Office systems
        1.3.2 Others

2. Economic factors

3. Organizational factors

4. Social factors

5. Human factors

6. Environmental factors (Section developed after search tests)

7. Development tools

1. Technology

1.1 Information

Information system

- Integrated system
- Integrated information system
  . Open systems interconnection
  . Protocol
- Information management
- Information processing
  . Word processing
    Stand-alone word processing system
    Optical reader
    Optical character recognition
    Dictation equipment
  . Data processing
- Information edition
  . Phototypesetting
  . Cold type
- Information reproduction
  . Reprographics
    Copiers
    Printers
- Information filing, storage and retrieval
  . Micrographics
    Computer output microfilm (COM)
  . Electronic filing
  . Data bank
  . Data base
  . DBMS - Data base management system
  . Data base development
  . System integrity
  . System security

1. Technology

1.1 Information

Information system (suite)

- Equipment

- Hardware

  . Terminal
  . Microcomputer
  . Minicomputer
  . Computer
  . Mainframe
  . Computer networks
  . Microprocessors
  . Peripheral
  . Modem
  . Storage devices

    Floppy disk
    Hard disk
    CD-ROM
    Optical disk
    Digital optical disk

  . Input/output devices
  . Work station
  . Multifunction work station
  . Intelligent work station

- Software

  . Protocols
  . Software packages
  . Software operating systems
  . Application software
  . Software protection
  . Data flow
  . Languages
  . Turn key system

1. Technology

1.2 Communication

- Telecommunications

  . Communication network

    Local area network
    Wide area network

  . Network topology

    Star application
    Bus application
    Ring application

      Token ring
      Token passing

  . Gateway
  . Telephony

    Telephone
    Conference call
    Automatic dialing
    Private automatic branch exchange (PABX)
    Private branch exchange (PBX)
    Visiophone
    Visual telephone

  . Telex
  . Telematics

    Computer based communication systems (CBCS)

      Electronic mail

        Electronic mailbox
        Electronic messaging

          Electronic voice messaging
          Electronic text messaging

        Telecopy
        Fac simile
        Teletex

1. Technology

1.2 Communication (suite)

Computer based communication systems (CBCS) (suite)

Videotex

Electronic directory
Teletext

Teleconferencing

Computer teleconferencing
Audio conferencing

Telewriting
Grafics tablet

Video conferencing
Visio conferencing

Telecommuting
Teleworking
Remote work
Electronic publishing

1. Technology

1.3 Application areas (information and communication)

1.3.1 Office systems

- Office information systems
- Office communication systems
- Integrated office communication system
- Integrated office system
  . Integrated office
- Office automation (OA)
- Office data processing
- Automated office
- Bureautics
- Electronic office system
- Electronic office
- Office of the future
- Paperless office
  . Office technology

1.3.2 Others

- Work
  . Automated work
  . Computer-mediated work
- Workplace
  . Workplace automation
- Financial planning systems
- Accounting systems

1. Technology

1.3 Application areas (information and communication)

1.3.2 Others (suite)

- Pricing systems
- Banking systems
  . Electronic funds transfer
- Marketing systems
- Production planning systems
- Governmental systems
- Health systems
- Educational systems
  . Computer aided education
  . Computer assisted learning
- Military systems
- Legal systems
- Medical systems
- Human resource systems (personnel systems)
- Information storage and retrieval systems
  . Bibliographic systems

2. Economic factors

- Economic environment
- Economic impacts
- Tertiary sector
- Service industry
- Service economy
- Productivity
- Organizational productivity
- Labor force
- Labor productivity
  - . White collar productivity
  - . Knowledge worker productivity
  - . Executive productivity
- Production standards
- Performance
- Efficiency
- Organizational efficiency
  - . Office systems efficiency
- Effectiveness
- Organizational effectiveness
  - . Office systems effectiveness
- Industrial development
- Employment
- Unemployment
- Competitiveness
- Cost/benefit analysis

2. Economic factors (suite)

- Technology transfer
- Work quality
- Work theories
- Work modelling
- Work measurement

3. Organizational factors

- Structure of organization
- Organization modelling
- Organizational impacts
- Methods and procedures
- Needs study
- Feasibility study
- Requirement analysis
- Decision support system (DSS)
- Decision making process
- Pilot project
- Measurement of change
- Management information systems (MIS)
- System integration
  - . Centralization
  - . Decentralization
- Organization dynamics
- Organizational change
- Organizational communication
- Organizational culture
- Organizational design
- Organizational structure
- Organizational stress
- Organizational development
- Human resources
- Staff management

3. Organizational factors (suite)

- Task organization
  - . Managerial tasks
  - . Secretarial tasks
  - . Clerical tasks
- Work organization
- Work flow
- Work distribution
- Work allocation
- Job design
- Human information processing
- Office automation methodology
- Model of office activities
- Office organization
- Office modelling
- Office personnel
- Measurement of change
- Workstation integration

4. Social factors

- Social environment
- Social issues
- Social impacts
- Social aspects of automation
- Computerization of society
- Technological environment
- Socio-technical systems
- Social organization
- Changes in work force
- Labour relations
- Turnover
- Technological unemployment
- Manpower issues
- Human relations
- Women work
- Ethics
- Labour market
- Work force
- Worker
  - . White collar worker
  - . Intellectual worker
  - . Information worker
  - . Knowledge worker
- Office environment
- Team work
- Tele scabbing

5. Human factors

- Work psychology
- Work autonomy
- Worker motivation
- Employee involvment
- Employee awareness
- Human adaptation
- Resistance to change
- Ergonomic factors
  . Physical ergonomics
    Ergonomics of terminals
    Workstation design
    Computer user environment
  . Cognitive ergonomics
    Cognitive models
    Cognitive psychology
- Occupational health
- Occupational safety
- User characteristics
- User attitudes
- User behavior
- User expectations
- Role theory
- Behavior analysis
- Behavior problems
- Behavior issues
- Training

5. Human factors (suite)

- Job satisfaction
- Quality of working life
- Human communication needs
- Human communication network
- Man-machine systems
- Human-machine systems
- Interface
  - . User interface
  - . Human interface design
  - . User friendliness
  - . User aids

6. Environmental factors

6.1 Legal environment

- Access to information
- Privacy
- Transborder data flows
- Criminal code
- Evidence acts
- Intellectual property
- Records retention requirements
- Technology transfer

6.2 Management environment

- Information resources management (IRM)
- Integrated information management
- Centralization
- Decentralization
- In-house versus contracting out

6.3 Workplace / Office topology

- Manufacturing sector
- Services - Distribution and transportation sector
- Services - Information services sector
  - . Public sector (government)
  - . Private sector

7. Development tools

- Modelling
- Future trends
- Technological innovation
- Expert systems
- Representation of knowledge
- Artificial intelligence

- Voice recognition
- Speech recognition
- Voice synthesis

- Automated translation
- Computer assisted translation
- Natural language input
- Natural language interfaces

- Very high level languages
- 5th generation computer
- 5th generation computer software

- Advanced office technology
- Intelligent office work station

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APPENDIX 2

Commercial Databases Dealing with
the Field of Workplace Automation

Commercial Databases Dealing with the Field of Workplace Automation[1]

TYPE	COMMERCIAL DATABASES RELATED TO THE WORKPLACE AUTOMATION FIELD		
	Directly	Indirectly	Total
Numeric	-	9	9
Factual	6	32	38
Full-text	23	36	59
Bibliographic	58	76	134
Software	4	46	50
TOTAL	91	199	290

[1] Source: Cuadra Associates. Directory of Online Databases. New York, Cuadra/Elsevier, 1986,, Vol. 7, No. 3, 521 p.

APPENDIX 3

Principal Online Hosts selected

Principal Online Hosts Selected

ONLINE HOST NAME	DATABASES RELATED TO THE WORKPLACE AUTOMATION FIELD		
	Directly	Indirectly	Total
Dialog	25	28	53
Newsnet	20	43	63
Questel	6	9	15
Exec. Telecom	5	0	5
B.R.S.	4	14	18
ESA-IRS	4	5	9
CAN/OLE	3	5	8
Compuserve	3	10	13
M.D.C.	2	7	9
Cross Info.	2	0	2

TOTAL = 195

Total number of online hosts: 57

APPENDIX 4

Bibliographic Databases Most Relevant
to the Workplace Automation Field

Bibliographic Databases Most Relevant to the Workplace Automation Field

NAME OF DATABASE	DIALOG FILE NO.	SUBJECT AREA(S) COVERED	ONLINE HOST	PERIOD COVERED	UPDATED	COST/[1] HOUR ONLINE
ABI/INFORM	15	Administration; Management	Dialog	1971-86	Weekly	$US81
Artificial Intel. Online	-	Artificial intelligence	ESA-IRS	1984-86	Monthly	-
CBCA	262	Cdn. cur. aff. Business review	Dialog	1982-86	Monthly	$US72
Compendex	8	Engineering; technology	Dialog	1970-86	Monthly	$US108
Computer DATABASE	275	Computer sci.	Dialog	1983-86	Bimonthly	$US96
ET Engineering Meetings	165	Technical and engineering (conferences)	Dialog	1979-86	Monthly	$US108
EPA	-	Electronic publishing	Infoline	1975-86	Bimonthly	-
ERIC	1	Education, info.science	Dialog	1966-86	Monthly	$US30
Harvard Business Review	122	Administration, business	Dialog	1971-86	Bimonthly	$US75
INFODATA	-	Info. sciences	GID-SFT	1977-86	Quarterly	-
Info. Sc. Abstracts (ISA)	202	Information sciences	Dialog	1966-86	Bimonthly	$US70
INSPEC	12,13	Appl. Sci. computers etc.	Dialog	1969-86	Monthly	$US105
LISA	61	Library science, information sci.	Dialog	1969-86	Monthly	$US75
Management CONTENTS	75	Management; business	Dialog	1974-86	Monthly	$US90
Microcomputer Index	233	Micro-computers	Dialog	1981-86	Quarterly	$US45
NTIS	6	Am. gov. rep.; sci. and tech.	Dialog	1964-86	Biweekly	$US69
PASCAL/Sci. Info.	-	Information sci.	Questel	1973-86	Monthly	$CND132
Predicasts-PTS Promt	16	Economics; market studies	Dialog	1972-86	Weekly	$US114
SB - I	-	Computer sci.	Questel	1970-86	Monthly	-
SciSearch	34	Pure & applied sciences	Dialog	1984-86	Biweekly	$US153
Social Sci. Search	7	Social sci.	Dialog	1972-86	Monthly	$US99
Supertech	238	Art. intel; telecom., etc.	Dialog	1984-86	Monthly	$US108
TELEDOC	-	Technology	Questel	1972-86	Monthly	$CND144

[1] Hourly costs are those shown in database online hosts December 1986 catalogues.

APPENDIX 5

Number of Records Founds under "office(w)automation"
for the 17 Bibliographic Databases Selected
as Relevant in Dialog

Number Of Records Founds Under "Office(W)Automation"
For The 17 Bibliographic Databases Selected
As Relevant In Dialog

NAME OF DATABASE	FILE NO.	PERIOD COVERED	NUMBER OF RECORDS RETRIEVED[1]	% OF TOTAL RECORDS IN DATABASE[2]
Computer Database	275	1983-1986	5 750	3,1
INSPEC	13	1969-1986	4 878	0,3
ABI/INFORM	15	1971-1986	3 617	1,1
PTS - Promt	16	1972-1986	2 596	0,3
Management Contents	75	1974-1986	756	0,4
Info. Sc. Abstracts	202	1966-1986	628	0,7
EI Engineering Meeting	165	1979-1986	577	0,2
Microcomputer Index	233	1981-1986	469	1,3
Compendex	8	1970-1986	379	0,03
Can. Bus. Current Aff.	262	1982-1986	316	0,06
NTIS	6	1964-1986	128	0,01
ERIC	1	1966-1986	98	0,02
Social SciSearch	7	1972-1986	98	0,01
LISA	61	1969-1986	86	0,1
SciSearch	34	1984-1986	79	0,02
Harvard Bus. Review	122	1971-1986	21	0,8
Supertech	238	1984-1986	20	0,06

[1] Search done in the basic index.
[2] Source: Dialog Database Catalog, 1986.

APPENDIX 6

Coverage of Workplace Automation Subject Area
by 12 Databases Distributed by Dialog

Coverage of Workplace Automation Subject Area by 12 Databases Distributed by Dialog

Key:

File No.	Database Name
1	ERIC
6	NTIS
7	Social SciSearch
13	INSPEC
15	ABI/INFORM
34	SciSearch
61	LISA
75	Management Contents
202	Information Science Abstracts
233	Microcomputer Index
238	Supertech
275	Computer Database

Code - Typology Section

1. Technology
   - 1.1 Information
   - 1.2 Communication
   - 1.3 Application areas
     - 1.3.1 Office systems
     - 1.3.1 Others
2. Economic factors
3. Organizational factors
4. Social factors
5. Human factors
6. Environmental factors[1]
7. Development tools

[1] Since environmental factors had not yet been developed in the typology, no results appear under this code.

Coverage of Workplace Automation Subject Area by 12 Databases Distributed by Dialog

Terms searched[1]	File No. / Code	1	6	7	13	15	34	61	75	202	233	238	275
- Office?(2n)system?	1.3.1	25	131	79	749	147	73	27	73	106	31	2	878
- Office?(2n)automat?	1.3.1	46	55	134	4 193	2 942	103	44	585	491	482	38	5 145
- Information?(2n)system?	1.1	6 023	11 983	2,819	11 799	4 962	520	2 828	2 944	16 380	36	276	2 201
- Information(2n)management	1.1	1 717	2 961	637	5 251	1 753	140	659	1 631	1 965	29	6	947
- MIS	3.	50	218	255	1 121	1 914	231	18	429	75	191	1	1 421
- Information?(2n)technolog?	1.1	230	276	577	1 282	168	101	1 818	605	585	10	18	121
- Integrated()office?	1.3.1	0	0	4	100	33	6	0	7	10	1	2	695
- Computer?(2n)office?	1.3.1	19	18	39	199	38	18	13	16	33	11	0	61
- Bureautic?	1.3.1	0	0	1	0	0	0	0	0	0	0	0	0
- Office()data()process?	1.3.1	0	0	0	1	0	0	1	0	0	0	0	1
- Electronic()office?	1.3.1	15	1	12	184	45	4	32	41	26	4	0	21
- Office(2n)future	1.3.1	18	2	38	212	159	8	17	77	45	9	0	49
- Paperless(2n)office?	1.3.1	0	0	6	19	24	2	1	8	2	3	0	12
- Office(2n)technolog?	1.3.1	26	44	44	167	60	8	16	42	27	0	22	52
- Intelligent(2n)office?	1.3.1	0	0	0	3	4	0	0	2	0	0	0	0
- Organi?ation?(2n)research?	3.	112	160	322	27	99	33	166	141	30	0	2	4
- Communication(2n)system?	1.2	157	6 451	227	18 406	39	224	43	1 329	166	6	62	56
- Ergonomic?	5.	20	172	809	873	329	119	43	88	30	70	3	651
- Multilingual()system?	7.	0	0	0	1	0	0	14	0	2	0	0	0
- Electronic()information?	1.1	9	6	25	52	12	7	22	7	22	5	1	13
- Information?(2n)flow?	1.1	49	198	222	145	58	30	128	26	141	0	3	57
- Organi?ation?(2n)method?	3.	31	27	95	104	22	16	33	19	14	0	0	2
- Organi?ation?(2n)structure?	3.	194	495	469	129	738	98	41	2 242	36	1	8	820
- Organi?ation?(2n)adaptation?	3.	8	7	27	3	9	2	0	8	0	0	0	0
- Organi?ation?(f)productivity	2.	244	263	76	53	329	12	14	395	8	0	0	48
- Organi?ation?(f)performance	2.	609	831	247	72	614	17	38	903	13	0	0	51
- Organi?ation?(f)effectiveness	2.	2 380	1 176	257	48	353	7	10	230	7	0	0	1
- Organi?ation?(f)efficiency	2.	151	189	71	11	85	5	28	296	8	1	0	13

[1] Search limited to title and descriptor fields.

Coverage of Workplace Automation Subject Area by 12 Databases Distributed by Dialog

Terms searched	File No. Code	1	6	7	13	15	34	61	75	202	233	238	275
- Multilingual()software?	7.	0	0	0	1	1	0	0	0	0	0	0	1
- Standard?(f)software?	1.1	30	153	5	490	217	37	4	30	33	72	35	897
- Network?	1.2	5 365	13 413	4 138	43 194	6 867	3 990	1 819	1 633	3 920	1 320	1 344	12 880
- Strategic()planning?	3.	102	65	417	124	1 542	46	12	1 387	27	1	11	842
- Technolog?(2n)change?	4.	130	140	617	116	2 636	54	31	2 942	51	2	4	27
- Technolog?(2n)innovation?	7.	56	1 427	309	121	100	42	677	300	797	2	5	17
- Performance(2n)measurement?	2.	32	297	129	304	90	63	137	68	42	0	2	1 104
- Macro()economic()model	2.	3	1	8	4	3	0	0	2	0	0	0	1
- Integrated(2n)system?	1.1	80	2 492	218	1 409	143	214	155	56	201	14	140	2 076
- Computer?(2n)communication?	1.2	67	1 030	163	3 622	67	66	95	13	175	41	16	77
- Information?(2n)process?	1.1	2 908	3 000	1 735	540	1 338	268	261	1 398	708	19	12	369
- Communication?(2n)hardware?	1.2	2	10	4	20	3	2	0	1	3	2	0	7
- Communication?(2n)software?	1.2	6	14	9	313	18	18	1	2	22	27	4	2 651
- R&D(f)office?	7.	0	0	0	0	48	0	0	0	0	0	0	0
- Multiple()function?()workstation?	7.	0	0	0	0	0	0	0	0	0	0	0	0
- System?()design?	1.2	148	2 084	237	2 184	1 700	298	167	295	254	14	32	1 019
- Local()area()network?	1.2	12	79	35	2 709	1 071	202	26	23	92	766	32	4 808
- Large()scale()network?	1.2	1	9	7	25	0	4	1	0	8	0	0	0
- Communication?(2n)network?	1.2	94	2 077	195	4 200	2 806	101	62	18	189	10	51	85
- Gateway?	1.2	55	73	60	251	73	33	48	18	31	27	7	190
- Interface?	1.2	276	9 380	719	22 260	275	3 950	210	174	439	945	606	3 600
- System?()interconnect?	1.2	4	20	10	1 120	9	9	5	0	19	0	4	21
- Interconnect?(2n)protocol?	1.1	0	3	0	4	0	1	0	0	0	0	2	0
- Advanced()technolog?	7.	11	270	34	100	19	34	6	10	4	2	6	16
- Artificial()intelligence	7.	476	2 506	317	3 573	542	250	78	99	886	403	546	2 148
- Fifth()generation()computer?	7.	2	5	0	80	6	0	0	3	19	2	47	14
- Intelligent()workstation?	7.	0	1	0	4	2	3	0	0	0	0	0	11

Coverage of Workplace Automation Subject Area
by 12 Databases Distributed by Dialog

Terms searched	File No. / Code	1	6	7	13	15	34	61	75	202	233	238	275
- Computer()assisted()translat?	7.	0	1	0	7	0	0	0	0	0	1	0	0
- Automat?(2n)translat?	7.	9	30	19	62	4	10	26	0	56	1	1	6
- Intelligent()translation	7.	0	0	0	1	0	0	0	0	0	0	0	0
- Expert()system?	7.	35	182	154	2 467	236	465	64	21	125	180	565	1 090
- Data()handling	1.1	5	235	24	2 114	8	30	7	3	23	5	3	8
- Data(2n)management	1.1	103	3 953	282	9 224	1 617	203	192	149	719	2 186	13	5 412
- Telematic?	1.2	4	6	15	330	8	9	21	3	17	3	3	13
- Telecommunication?	1.2	2 133	3 401	511	14 275	4 996	358	1 457	1 927	429	1 165	147	7 177
- Computer?(2n)system?	1.2	585	5 173	1 168	13 275	768	880	614	2 051	5 049	532	78	6 529
- Information(2n)edit?	1.1	22	18	48	16	0	1	8	0	19	1	0	1
- Information(2n)storage?	1.3.2	1 431	347	94	700	870	35	5 520	718	6 208	213	14	1 349
- Information(2n)retriev?	1.1	3 990	7 230	903	6 415	1 143	66	7 762	733	15 279	133	16	1 347
- Electronic(2n)filing	1.1	1	0	4	21	18	2	2	26	4	1	0	200
- Information(2n)reproduct?	1.1	0	1	6	4	0	2	1	0	12 610	0	0	0
- System?(2n)integrity	1.1	1	26	6	64	4	10	0	4	1	0	1	94
- System?(2n)security	1.1	24	130	133	354	726	29	58	96	621	6	13	421
- Data()flow?	1.1	8	101	60	542	124	69	26	17	71	4	17	308
- Electronic()mail?	1.2	26	69	41	1 362	722	48	114	204	94	307	23	1 624
- Electronic()messag?	1.2	5	12	4	37	13	1	3	3	16	3	0	11
- Electronic()meeting?	1.2	0	0	3	2	4	4	0	1	1	1	0	3
- Teleconferenc?	1.2	271	143	53	798	461	34	76	140	62	38	37	428
- Computer?()conferenc?	1.2	20	20	49	1 898	28	18	52	4	52	45	0	915
- Computer?()network?	1.2	53	1 430	167	9 719	1 423	134	40	263	273	19	111	108
- Telecommut?	1.2	3	2	10	27	42	9	3	14	8	45	4	157
- Work(2w)home	1.2	21	5	62	11	82	10	1	75	6	10	0	212
- Cottage()industr?	1.2	3	5	17	7	81	2	1	40	2	5	0	57
- Electronic()publi?	1.3.2	18	3	56	395	55	15	108	41	55	182	3	728
- Desktop()publishing	1.3.2	1	0	0	10	12	0	0	2	1	38	1	217

Coverage of Workplace Automation Subject Area by 12 Databases Distributed by Dialog

Terms searched	File No. Code	1	6	7	13	15	34	61	75	202	233	238	275
- Bank?(2n)automat?	1.3.2	1	16	15	70	1 209	6	8	161	8	0	0	29
- Automat?()teller	1.3.2	1	1	4	145	882	1	0	160	1	0	0	7
- EFTS	1.3.2	0	3	22	483	1 287	0	1	397	3	0	0	276
- White()collar()worker?	4.	5	2	51	0	317	0	1	306	1	0	1	2
- Office()worker?	4.	27	6	66	14	13	11	2	14	6	5	0	11
- Technolog?(2n)transfer	4.	510	3 266	602	461	510	122	72	412	846	3	117	393
- Technolog?(f)unemployment	4.	103	19	20	1	150	2	1	102	1	0	8	179
- Tele()scab?	4.	0	0	0	0	0	0	0	0	0	0	0	0
- Resistance(2w)change?	5.	18	23	47	33	22	29	1	203	1	0	1	90
- Wom?n(2n)work?	4.	338	72	1 012	3	130	34	18	113	11	1	0	2
- Training(f)office	5.	444	974	84	107	249	16	10	131	5	13	3	170
- Quality(2w)work?()life	5.	45	34	169	10	91	5	4	82	4	0	2	1
- Cognitive()psychology	5.	47	25	224	14	1	12	1	0	5	0	1	1
- Word(w)process?	1.1	817	111	193	3 625	2 383	140	225	707	528	2 522	4	5 277
- WP	1.1	14	23	471	199	639	27	9	78	23	49	0	308
- Text(w)process?	1.1	37	239	63	269	11	4	29	1	78	14	1	18
- Text(w)edit?	1.1	19	131	30	1 453	237	13	24	13	68	220	0	905
- Information(w)process?	1.1	2 840	2 879	1 477	5 189	1 331	219	167	1 393	547	17	9	356
- Data(w)process	1.1	2 884	28 898	652	20 784	6 078	307	881	1 983	696	28	17	1 155
.TOTAL = 716,629	.Total =	38 915	123 458	25 946	215 514	63 497	14 861	27 459	33 407	72 775	12 557	4 464	83 776
. total number of records in each database		583 000	1164000	1557000	1700000	301 000	6643000	66 700	243 500	88 000	37 481	53 000	161 000
Source: Dialog Database Catalog, 1986													
. percentage of database	% =	6,7	10,6	1,7	12,7	21,1	0,2	41,2	13,7	82,7	33,5	8,4	52,0

APPENDIX 7

Test Search of the Most Relevant
Databases Distributed by Dialog

Test Search Of The Most Relevant
Databases Distributed By Dialog

DATABASE	NUMBER OF RECORDS IN SUBJECT AREA	% OF DATABASE
INSPEC	215 514	12,7%
NTIS	123 458	10,6%
Computer DB	83 776	52,0%
I.S.A.	72 775	82,7%
ABI/INFORM	63 497	21,1%
ERIC	38 915	6,7%
Management CONTENTS	33 407	13,7%
LISA	27 459	41,2%
Social SciSearch	25 946	1,7%
SciSearch	14 861	0,2%
Microcomputer Index	12 557	33,5%
Supertech	4 464	8,4%
TOTAL	716 629	

APPENDIX 8

Coverage of the Workplace Automation Field
by 12 Databases Distributed by Dialog
according to Workplace Automation Typology

Coverage of the Workplace Automation Field by 12 Databases Distributed by Dialog according to Workplace Automation Typology[1]

	1	6	7	13	15	34	61	75	202	233	238	275
1. Technology	32 723 (84,1)[2]	110 574 (89,6)	19 042 (73,4)	205 465 (95,3)	52 293 (82,4)	13 123 (88,3)	25 913 (94,4)	22 461 (67,2)	69 665 (95,7)	11 678 (93,0)	3 130 (70,1)	74 639 (89,1)
1.1 Information	17 821 (45,8)	57 817 (46,8)	9 687 (37,3)	64 830 (30,1)	21 827 (34,4)	2 374 (16,0)	7 504 (27,3)	11 167 (33,4)	36 043 (49,5)	5 240 (41,7)	571 (12,8)	21 144 (25,2)
1.2 Communication	9 311 (23,9)	44 906 (36,4)	7 904 (0,5)	126 590 (58,7)	21 556 (33,9)	10 404 (70,0)	4 859 (17,7)	8 231 (24,6)	11 327 (15,6)	5 331 (42,5)	2 461 (55,1)	42 628 (50,9)
1.3 Application areas	5 591 (14,4)	7 851 (6,4)	1 451 (5,6)	14 045 (6,5)	8 910 (14,0)	345 (2,3)	13 550 (49,3)	3 063 (9,2)	22 295 (30,6)	1 107 (8,8)	98 (2,2)	10 867 (13,0)
1.3.1 Office systems	149 (0,4)	251 (0,2)	357 (1,4)	5 827 (2,7)	3 452 (5,4)	222 (1,5)	151 (0,5)	851 (2,5)	740 (1,0)	541 (4,3)	64 (1,4)	6 914 (8,3)
1.3.2 Others[3]	5 442 (14,0)	7 600 (6,2)	1 094 (4,2)	8 218 (3,8)	5 458 (8,6)	123 (0,8)	13 399 (48,8)	2 212 (6,6)	21 555 (29,6)	566 (4,5)	34 (0,8)	3 953 (4,7)
2. Economic factors	3 419 (8,8)	2 757 (2,2)	785 (3,0)	492 (0,2)	1 474 (2,3)	104 (0,7)	227 (0,8)	1 894 (5,7)	78 (0,1)	1 (0,01)	2 (0,04)	1 218 (1,5)
3. Organizational factors	497 (1,3)	972 (0,8)	1 585 (6,1)	1 508 (0,7)	4 324 (6,8)	426 (2,9)	270 (1,0)	4 226 (12,7)	182 (0,3)	193 (1,5)	22 (0,5)	3 089 (3,8)
4. Social factors	1 113 (2,9)	3 505 (2,8)	2 368 (9,1)	595 (0,3)	3 756 (5,9)	223 (1,5)	125 (0,5)	3 889 (11,6)	916 (1,3)	11 (0,1)	130 (2,9)	614 (0,7)
5. Human factors	574 (1,5)	1 228 (1,0)	1 333 (5,1)	1 037 (0,5)	692 (1,1)	181 (1,2)	59 (0,2)	504 (1,5)	45 (0,1)	83 (0,7)	10 (0,2)	913 (1,1)
6. Environmental factors[4]	–	–	–	–	–	–	–	–	–	–	–	–
7. Development tools	589 (1,5)	4 422 (3,6)	833 (3,2)	6 417 (3,0)	958 (1,5)	804 (5,4)	865 (3,2)	433 (1,2)	1 889 (2,6)	591 (4,7)	1 170 (26,2)	3 303 (3,9)
Total = 716 629 Total = Total number of records in each database (Dialog Database Catalog, 1986).	38 915	123 458	25 946	215 514	63 497	14 861	27 459	33 407	72 775	12 557	4 464	83 776
	583 000	1164000	1557000	1700000	301 000	6643000	66 700	243 500	88 000	37 481	53 000	161 000
	6,7	10,6	1,7	12,7	21,1	0,2	41,2	13,7	82,7	33,5	8,4	52,0

[1] Search limited to title and descriptor fields.
[2] Relative % shown in brackets.
[3] "Information retrieval" and "Information storage" both came under this heading, and thus overstate the "Others" figures for ERIC, LISA and I.S.A.
[4] Section developed after search tests.

APPENDIX 9

Coverage of Workplace Automation Field
in Main Dialog Service Databases

Coverage of Workplace Automation Field in Main Dialog Service Databases

SUBJECT AREA IN DATABASES	NUMBER OF RECORDS	% OF TOTAL
TECHNOLOGY		
INFORMATION	256 025	35,8%
COMMUNICATION	295 508	41,2%
APPLICATION AREAS	89 173	12,4%
SUB-TOTAL	640 706	89,4%
ECONOMIC FACTORS	12 451	1,7%
ORGANIZATIONAL FACTORS	17 294	2,4%
SOCIAL FACTORS	17 245	2,4%
HUMAN FACTORS	6 659	1,0%
DEVELOPMENT TOOLS	22 274	3,1%
TOTAL	716 629	100,0%

APPENDIX 10

Example of Increase in Documents
Published in the Field of Office Automation

Example of Increase in Documents Published in the Field of Office Automation

Search expression used:

"Office(w)automation" or "Office(2w)future"

DATABASE	NUMBER OF REFERENCES[1]		% OF GROWTH (4 YR)
	JUNE 1982	OCTOBER 1986	
INSPEC	406	4 405	985%
NTIS	7	57	714%
ABI/INFORM	851	3 101	264%
ERIC	38	64	68%
MANAG.CONTENTS	144	662	360%
SOCIAL SCISEARCH	7	172	2357%
COMPENDEX	79	379	380%
PTS PROMPT	632	2 596	310%
TOTAL	2 164	11 436	429%

[1] Search in the basic index.

APPENDIX 11

Downloading costs for pilot project
(March 20, 1987)

Downloading Costs For Pilot Project
(March 20, 1987)

Dialog No. and database name	Hourly search cost ($ US) Printing cost per record (online)	Number of [1] records retrieved	Time [2] (hr)	Connexion[3] cost ($ US)	Telecommunications [4] cost ($US)	Printing [5] cost ($ US)	Cost/ [6] person ($ US)	Royalties [7] ($ US)	Total Cost per record ($ US)
6- NTIS	69$/0.25$	18	0,232	16,00	2,55	4,50	2,41	?	25,46$/1,41$
7- Social SciSearch	99$/0,40$	17	0,162	16,03	1,78	6,80	1,68	?	26,29$/1,55$
13- INSPEC	105$/0,48$	355	1,657	173,98	18,22	170,40	17,23	113,60$	493,43$/1,39$
15- ABI/INFORM	96$/0,68$	132	1,116	107,13	12,27	89,76	11,61	?	220,77$/1,68$
34- SciSearch	153$/0,30$	60	0,333	50,90	3,66	18,00	3,46	?	76,02$/1,27$
61- LISA	75$/0,25$	3	0,064	4,80	0,70	0,75	0,67	?	6,92$/2,30$
75- Management contents	90$/0,48$	35	0,241	21,69	2,65	16,80	2,51	?	43,65$/1,25$
202- ISA	70$/0,35$	78	0,755	52,59	5,65	27,30	7,85	?	93,39$/1,20$
233- Microcomputer Database	45$/0,15$	15	0,155	6,98	1,71	2,25	1,61	?	12,55$/0,84$
275- Computer Database	96$/0,50$	143	1,241	119,13	13,65	71,50	12,91	?	217,19$/1,52$
238- Supertech	108$/0,30$	14	0,161	17,38	1,77	4,20	1,67	?	25,02$/1,79$
		870						Average:	$1,47
								Standard deviation:	±$0,38
									or $1,98 CND[8]

1 Citations retrieved under expression "office?(2N) automat?", in title field, for 1985 and 1986.
2 Time required to download number of records shown at transmission speed of 1 200 baud.
3 Calculated by multiplying time required to download by hourly connection cost.
4 Calculated assuming telecommunications cost of $US 11,00/hr.
5 Calculated by multiplying number of records shown on screen and stored on hard disk by unit cost of online printing.
6 If we assume an annual salary of CND 30,000 for the employee responsible for downloading, we are looking at an hourly salary of $US 10,40 ($CND 16/hr = 35% exchange rate). This amount is multiplied by the time needed to download.
7 Royalties of $US 0,32 per record downloaded from INSPEC database.
8 Exchange rate = 35%.

APPENDIX 12a

Record Downloaded from ABI/INFORM Database
Distributed by Dialog

Record Downloaded from ABI/INFORM Database Distributed by Dialog

1/4/5
FN- ABI/Inform (File 15)¦
AN- 87019059
TI- Retraining for Office Automation¦
AU- Lundgren, Terry D.; Garrett, Norman A.; Fernberg, Patricia M.¦
JN- Modern Office Technology¦
VO- v32n5¦
PG- 56-60¦
PD- May 1987¦
CD- MDOPAW¦
SN- 0746-3839¦
JC- MOP¦
DT- Journal Paper¦
LA- English¦
NP- 3¦
AV- ABI/INFORM¦
AB- Office workers are being challenged by the office automation (OA) permeating the office and the need retraining to remain productive. A lack of adequate training in new skills and procedures has been the major reason for OA failures, according to available research and experience in the field. Training will make the users proficient with the hardware and software. Instead of allowing workers to learn on their own, firms should provide training, such as tutorials and classes with teachers. According to Andrew Wilkinson, senior director of product marketing at Advanced Systems Inc., executives need to use the facilities provided by computing. Automation training is a stressful situation for many managers who have not grown up with automation, says Jeffrey Glenn-Levin, president of Skill-Builders. An orientation session given by consultants followed by a seminar is one way to protect sensitive egos, says Wilkinson.¦
DE- Office automation; Technological change; Retraining; Factors; Success; Roles; Operator acceptance¦
CC- 5210 (CN=Office automation); 6200 (CN=Training& development)¦

APPENDIX 12b

Record Downloaded from Computer Database
Database Distributed by Dialog

Record Downloaded from Computer Database
Database Distributed by Dialog

1/4/1
1208615
FN- COMPUTER DATABASE File 275
AN- 1208615¦
TI- Is office automation making automatons of skilled workers?¦
AU- O'Leary, Meghan¦
JN- PC Week¦
VL- v4¦
IS- n24¦
PG- p45(2)¦
PD- June 16¦
PY- 1987¦
AB- The implementation of office automation has eliminated many clerical office jobs and allowed lower-level office workers to take on more responsibilities and perform other tasks. The automation of the work of semi-professional office workers may reduce the level of skill required for their positions and introduce more routine and repetitiveness into their jobs. These workers are concentrated in financial, insurance, and utilities companies; and the so-called de-skilling of their jobs can make them over-paid data entry clerks. Companies may be unwilling to pay the higher salaries of skilled positions to the workers when the skill is removed from their jobs. Advances in office automation technology jeopardize data entry jobs in general; such technologies as optical scanners and automated banking could ultimately eliminate all data entry work in a company. The fate of office workers of the future is discussed.¦
DE- Office Automation; Employee; Work Environment; Social Issues; Quality of Life; Ergonomics; Analysis; Technology; Human Factors¦

APPENDIX 12c

Record Downloaded from INSPEC Database
Distributed by Dialog

Record Downloaded from INSPEC Database Distributed by Dialog

1/4/1
FN- DIALOG INSPEC file 13
AN- 1939290
AN- <INSPEC> B87049307; C87043681¦
TI- Office automation and program control data-input processing for ANB telenews system¦
AU- Ezaki, S.; Tanaka, Y.¦
CS- Div. of Public Utility Syst., NEC Corp., Tokyo, Japan¦
JN- NEC Rés. & Dev. (Japan) no.84 94-8¦
PY- Jan. 1987¦
CO- NECRAU¦
SN- 0547-051X¦
DT- JOURNAL PAPER; ¦
LA- ENGLISH¦
TC- PRACTICAL; ¦
AB- Data input and control for broadcasting devices had been realized by process computers, so-called 'APS'. In the NDPS (News Data Processing System) for ANB (Asahi National Broadcasting Co., Ltd.), the input process is separated and realized by a general purpose computer, and some other relating functions are added. So the up-to-date control data and up-to-date deskwork data are open to all the news-producing staff¦
DE- office automation; telecommunications computer control; television broadcasting; television systems
ID- data input processing; office automation; TV broadcasting; telecommunications computer control; TV systems; program control; ANB telenews system; broadcasting devices; process computers; Asahi National Broadcasting Co¦
CC- B6430; B6420; C7410F; C3370J; C7104¦¦

APPENDIX 13a

Conversion File (ABI/INFORM)

Turbo-Biblio Software Conversion File to Convert Data Downloaded from ABI/INFORM Database to MINISIS BATCH Format

```
=DICTDI15CHAFIN      ¦
=DICTDI15EQVCBIB001 !IDENR\AN- \
=DICTDI15EQVCBIB002 !A010!\FN- \1\79
=DICTDI15EQVCBIB003 !A400!\TI- \1\79
=DICTDI15EQVCBIB004 !B670!\AU- \1\79
=DICTDI15EQVCBIB005 !B730!\JN- \1\79
=DICTDI15EQVCBIB006 !B430!\VO- \1\79
=DICTDI15EQVCBIB007 !B470!\PG- \1\79
=DICTDI15EQVCBIB008 !B110!\PD- \1\79
=DICTDI15EQVCBIB009 !A250!\CD- \1\79
=DICTDI15EQVCBIB010 !A260!\SN- \1\79
=DICTDI15EQVCBIB011 !A170!\DT- \1\79
=DICTDI15EQVCBIB012 !A230!\LA- \1\79
=DICTDI15EQVCBIB013 !B030!\AV- \1\79
=DICTDI15EQVCBIB014 !A990!\AB- \1\79
=DICTDI15EQVCBIB015 !B870!\CO- \1\79
=DICTDI15EQVCBIB016 !B890!\DN- \1\79
=DICTDI15EQVCBIB017 !A810!\DE- \1\79
=DICTDI15EQVCBIB018 !B850!\CC- \1\79
=DICTDI15RECDEB      AN-
=DICTDI15RECFIN      ¦¦
=DICTDI15RECRECHERCH/4/
=DICTDI15SEPCBIB001 AU- \;
=DICTDI15SEPCBIB002 DE- \;
=DICTDI15TYPLIGNE    79
```

APPENDIX 13b

Conversion File (Computer Database)

Turbo-Biblio Software Conversion File to Convert Data Downloaded from Computer Database Database to MINISIS BATCH Format

```
=DICTDI27CHAFIN      ¦
=DICTDI27EQVCBIB001 !IDENR\/4/
=DICTDI27EQVCBIB002 !A010!\FN- \1\79
=DICTDI27EQVCBIB003 !A400!\TI- \1\79
=DICTDI27EQVCBIB004 !C670!\AU- \1\79
=DICTDI27EQVCBIB005 !C690!\CS- \1\79
=DICTDI27EQVCBIB006 !C730!\JN- \1\79
=DICTDI27EQVCBIB007 !C430!\VL- \1\79
=DICTDI27EQVCBIB008 !C450!\IS- \1\79
=DICTDI27EQVCBIB009 !C470!\PG- \1\79
=DICTDI27EQVCBIB010 !C490!\PD- \1\79
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=DICTDI27SEPCBIB002 DE- \;
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APPENDIX 13c

Conversion File (INSPEC)

Turbo-Biblio Software Conversion File to Convert Data Downloaded from INSPEC Database to MINISIS BATCH Format

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=DICTDI13EQVCBIB002 !A010!\FN- \1\79
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=DICTDI13EQVCBIB005 !A670!\AU- \1\79
=DICTDI13EQVCBIB006 !A690!\CS- \1\79
=DICTDI13EQVCBIB007 !A730!\JN- \1\79
=DICTDI13EQVCBIB008 !A110!\PY- \1\79
=DICTDI13EQVCBIB009 !A750!\CT- \1\79
=DICTDI13EQVCBIB010 !A770!\CL- \1\79
=DICTDI13EQVCBIB011 !A790!\CY- \1\79
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=DICTDI13EQVCBIB013 !A470!\PG- \1\79
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=DICTDI13RECFIN      ¦¦
=DICTDI13RECRECHERCH/4/
=DICTDI13SEPCBIB001 AU- \;
=DICTDI13SEPCBIB002 DE- \;
=DICTDI13SEPCBIB003 ID- \;
=DICTDI13TYPLIGNE    79
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APPENDIX 14a

Record Converted to BATCH Format (ABI/INFORM)

ABI/INFORM Database Record Converted to MINISIS BATCH Format

!IDENR
!A010!ABI/Inform (File 15)
!A400!Retraining for Office Automation
!B670!Lundgren, Terry D.
!B670!Garrett, Norman A.
!B670!Fernberg, Patricia M.
!B730!Modern Office Technology
!B430!v32n5
!B470!56-60
!B110!May 1987
!A250!MDOPAW
!A260!0746-3839
!A170!Journal Paper
!A230!English
!B030!ABI/INFORM
!A990!Office workers are being challenged by the office automation (OA) permeating the office and the need retraining to remain productive. A lack of adequate training in new skills and procedures has been the major reason for OA failures, according to available research and experience in the field. Training will make the users proficient with the hardware and software. Instead of allowing workers to learn on their own, firms should provide training, such as tutorials and classes with teachers. According to Andrew Wilkinson, senior director of product marketing at Advanced Systems Inc., executives need to use the facilities provided by computing. Automation training is a stressful situation for many managers who have not grown up with automation, says Jeffrey Glenn-Levin, president of Skill-Builders. An orientation session given by consultants followed by a seminar is one way to protect sensitive egos, says Wilkinson.
!A810! Office automation
!A810!Technological change
!A810!Retraining
!A810!Factors
!A810!Success
!A810! Roles
!A810! Operator acceptance
!B850!5210 (CN=Office automation); 8200 (CN=Training & development)

APPENDIX 14b

Record Converted to BATCH Format (Computer Database)

Computer Database Record Converted to MINISIS BATCH Format

!IDENR
!A010!COMPUTER DATABASE File 275
!A400!Is office automation making automatons of skilled workers?
!C870!O'Leary, Meghan
!C730!PC Week
!C430!v4
!C450!n24
!C470!p45(2)
!C490!June 16
!C110!1987
!A990!The implementation of office automation has eliminated many clerical office jobs and allowed lower-level office workers to take on more responsibilities and perform other tasks. The automation of the work of semi-professional office workers may reduce the level of skill required for their positions and introduce more routine and repetitiveness into their jobs. These workers are concentrated in financial, insurance, and utilities companies; and the so-called de-skilling of their jobs can make them over-paid data entry clerks. Companies may be unwilling to pay the higher salaries of skilled positions to the workers when the skill is removed from their jobs. Advances in office automation technology jeopardize data entry jobs in general; such technologies as optical scanners and automated banking could ultimately eliminate all data entry work in a company. The fate of office workers of the future is discussed.
!A810!Office Automation
!A810!Employee
!A810!Work Environment
!A810!Social Issues
!A810!Quality of Life
!A810!Ergonomics
!A810!Analysis
!A810!Technology
!A810! Human Factors

APPENDIX 14c

Record Converted to BATCH Format (INSPEC)

INSPEC Database Record Converted to MINISIS BATCH Format

```
!IDENR
!A010!DIALOG INSPEC file 13
!A400!Office automation and program control data-input processing
for ANB telenews system
!A670!Ezaki, S.
!A670!Tanaka, Y.
!A690!Div. of Public Utility Syst., NEC Corp., Tokyo, Japan
!A730!NEC Res. & Dev. (Japan) no.84 94-8
!A110!Jan. 1987
!A250!NECRAU
!A260!0547-051X
!A170!JOURNAL PAPER;
!A230!ENGLISH
!A190!PRACTICAL;
!A990!Data input and control for broadcasting devices had been
realized by process computers, so-called 'APS'. In the NDPS (News
Data Processing System) for ANB (Asahi National Broadcasting CO.,
Ltd.), the input process is separated and realized by a general
purpose computer, and some other relating functions are added. So
the up-to-date control data and up-to-date deskwork data are open
to all the news-producing staff
!A810!office automation
!A810!telecommunications computer control
!A810!television broadcasting
!A810! television systems
!A830!data input processing
!A830!office automation
!A830!TV broadcasting
!A830! telecommunications computer control
!A830!TV systems
!A830!program control
!A830! ANB telenews system
!A830!broadcasting devices
!A830!process computers
!A830! Asahi National Broadcasting Co
!A850!B6430; B6420; C7410F; C3370J; C7104
```

APPENDIX 15a

ABI/INFORM Record Uploaded to MINISIS

ABI/INFORM Database Record Uploaded to SIRI Database in MINISIS System

ISN=12413
A260 ISSN : 0748-3839
A400 TITRE : Retraining for Office Automation
A010 FN : ABI/Inform (File 15)
A170 DT : Journal Paper
A230 LA : English
A810 DE : Office automation
Technological change
Retraining
Factors
Success
Roles
Operator acceptance
B730 ABIJN : Modern Office Technology
B430 ABIVO : v32n5
B470 ABIPG : 56-60
B030 ABIAV : ABI/INFORM
A250 CODEN : MDOPAW
B670 ABIAU : Lundgren, Terry D.
Garrett, Norman A.
Fernberg, Patricia M.
B110 ABIPD : May 1987
B850 ABICC : 5210 (CN=Office automation); 8200 (CN=Training & development)
A990 AB : Office workers are being challenged by the office automation (OA) permeating the office and the need retraining to remain productive. A lack of adequate training in new skills and procedures has been the major reason for OA failures, according to available research and experience in the field.Training will make the users proficient with the hardware and software. Instead of allowing workers to learn on their own, firms should provide training, such as tutorials and classes with teachers. According to Andrew Wilkinson, senior director of product marketing at Advanced Systems Inc., executives need to use the facilities provided by computing. Automation training is a stressful situation for many managers who have not grown up with automation, says Jeffrey Glenn-Levin, president of Skill-Builders. An orientation session given by consultants followed by a seminar is one way to protect sensitive egos, says Wilkinson.

APPENDIX 15b

Computer Database Record Uploaded to MINISIS

Computer Database Record Uploaded to SIRI Database
in MINISIS System

ISN=12093
A400 TITRE : Is office automation making automatons of skilled workers?
A010 FN : COMPUTER DATABASE File 275
A810 DE : Office Automation
Employee
Work Environment
Social Issues
Quality of Life
Ergonomics
Analysis
Technology
Human Factors
C730 COMJN : PC Week
C430 COMVL : v4
C470 COMPG : p45(2)
C450 COMIS : n24
C490 COMPD : June 16
C670 COMAU : O'Leary, Meghan
C110 COMPY : 1987
A990 AB : The implementation of office automation has eliminated many clerical office jobs and allowed lower-level office workers to take on more responsibilities and perform other tasks. The automation of the work of semi-professional office workers may reduce the level of skill required for their positions and introducemore routine and repetitiveness into their jobs. These workers are concentratedin financial, insurance, and utilities companies; and the so-called de-skillingof their jobs can make them over-paid data entry clerks. Companies may be unwilling to pay the higher salaries of skilled positions to the workers when the skill is removed from their jobs. Advances in office automation technology jeopardize data entry jobs in general; such technologies as optical scanners and automated banking could ultimately eliminate all data entry work in a company. The fateof office workers of the future is discussed.

APPENDIX 15c

INSPEC Record Uploaded to MINISIS

INSPEC Database Record Uploaded to SIRI Database in MINISIS System

ISN=12083
A260 ISSN : 0547-051X
A400 TITRE : Office automation and program control data-input processing for ANB telenews system
A010 FN : DIALOG INSPEC file 13
A670 AU : Ezaki, S.
Tanaka, Y.
A690 CS : Div. of Public Utility Syst., NEC Corp., Tokyo, Japan
A730 JN : NEC Res. & Dev. (Japan) no.84 94-8
A110 PY : Jan. 1987
A170 DT : JOURNAL PAPER;
A230 LA : ENGLISH
A190 TC : PRACTICAL;
A810 DE : office automation
telecommunications computer control
television broadcasting
television systems
A830 ID : data input processing
office automation
TV broadcasting
telecommunications computer control
TV systems
program control
ANB telenews system
broadcasting devices
process computers
Asahi National Broadcasting Co
A850 CC : B6430; B6420; C7410F; C3370J; C7104
A250 CODEN : NECRAU
A990 AB : Data input and control for broadcasting devices had been realized by process computers, so-called 'APS'. In the NDPS (News Data Processing System) for ANB (Asahi National Broadcasting Co., Ltd.), the input process is separated and realized by a general purpose computer, and some other relating functions are added. So the up-to-date control data and up-to-date deskwork data are open to all the news-producing staff

APPENDIX 16a

Conversion/Editing File (ABI/INFORM)

Conversion/Editing File in Turbo-Biblio Software for ABI/INFORM

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=DICTDI15TYPLIGNE    79
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APPENDIX 16b

ABI/INFORM Bibliographic Record Edited in Turbo-Biblio

ABI/INFORM Bibliographic Record Edited in Turbo-Biblio

BASE DE DONNEES- ABI/Inform (File 15)
TITRE- Retraining for Office Automation
AUTEUR(S)- Lundgren, Terry D.; Garrett, Norman A.; Fernberg, Patricia M.
SOURCE- Modern Office Technology
VOLUME- v32n5
PAGES- 56-60
ANNEE DE PUBLICATION- May 1987
CODEN- MDOPAW
ISSN- 0746-3839
TYPE DE DOCUMENT- Journal Paper
LANGUE DU DOCUMENT- English
DISPONIBILITE- ABI/INFORM
RESUME- Office workers are being challenged by the office automation (OA) permeating the office and the need retraining to remain productive. A lack of adequate training in new skills and procedures has been the major reason for OA failures, according to available research and experience in the field. Training will make the users proficient with the hardware and software. Instead of allowing workers to learn on their own, firms should provide training, such as tutorials and classes with teachers. According to Andrew Wilkinson, senior director of product marketing at Advanced Systems Inc., executives need to use the facilities provided by computing. Automation training is a stressful situation for many managers who have not grown up with automation, says Jeffrey Glenn-Levin, president of Skill-Builders. An orientation session given by consultants followed by a seminar is one way to protect sensitive egos, says Wilkinson.
DESCRIPTEURS- Office automation; Technological change; Retraining; Factors; Success; Roles; Operator acceptance
CODE(S) DE CLASSIFICATION- 5210 (CN=Office automation); 6200 (CN=Training & development)

APPENDIX 16c

Conversion/Editing File (Computer Database)

Conversion/Editing File in Turbo-Biblio Software
for Computer Database

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APPENDIX 16d

Computer Database Bibliographic Record
Edited in Turbo-Biblio

Computer Database Bibliographic Record
Edited in Turbo-Biblio

BASE DE DONNEES- COMPUTER DATABASE File 275
TITRE- Is office automation making automatons of skilled workers?
AUTEUR(S)- O'Leary, Meghan
SOURCE- PC Week
SOURCE- v4
SOURCE- n24
SOURCE- p45(2)
SOURCE- June 16
ANNEE DE PUBLICATION- 1987
RESUME- The implementation of office automation has eliminated many clerical office jobs and allowed lower-level office workers to take on more responsibilities and perform other tasks. The automation of the work of semi-professional office workers may reduce the level of skill required for their positions and introduce more routine and repetitiveness into their jobs. These workers are concentrated in financial, insurance, and utilities companies; and the so-called de-skilling of their jobs can make them over-paid data entry clerks. Companies may be unwilling to pay the higher salaries of skilled positions to the workers when the skill is removed from their jobs. Advances in office automation technology jeopardize data entry jobs in general; such technologies as optical scanners and automated banking could ultimately eliminate all data entry work in a company. The fate of office workers of the future is discussed.
DESCRIPTEURS- Office Automation; Employee; Work Environment; Social Issues; Quality of Life; Ergonomics; Analysis; Technology; Human Factors

APPENDIX 16e

Conversion/Editing File (INSPEC)

Conversion/Editing File in Turbo-Biblio Software for INSPEC

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APPENDIX 16f

INSPEC Bibliographic Record Edited in Turbo-Biblio

INSPEC Bibliographic Record Edited in Turbo-Biblio

BASE DE DONNEES- DIALOG INSPEC file 13
TITRE- Office automation and program control data-input processing for ANB telenews system
AUTEUR(S)- Ezaki, S.; Tanaka, Y.
AFFILIATION- Div. of Public Utility Syst., NEC Corp., Tokyo, Japan
SOURCE- NEC Res. & Dev. (Japan) no.84 94-8
ANNEE DE PUBLICATION- Jan. 1987
CODEN- NECRAU
ISSN- 0547-051X
TYPE DE DOCUMENT- JOURNAL PAPER;
LANGUE DU DOCUMENT- ENGLISH
TYPE D'ANALYSE- PRACTICAL;
RESUME- Data input and control for broadcasting devices had been realized by process computers, so-called 'APS'. In the NDPS (News Data Processing System) for ANB (Asahi National Broadcasting Co., Ltd.), the input process is separated and realized by a general purpose computer, and some other relating functions are added. So the up-to-date control data and up-to-date deskwork data are open to all the news-producing staff
DESCRIPTEURS- office automation; telecommunications computer control; television broadcasting; television systems
IDENTIFICATEURS- data input processing; office automation; TV broadcasting; telecommunications computer control; TV systems; program control; ANB telenews system; broadcasting devices; process computers; Asahi National Broadcasting Co
CODE(S) DE CLASSIFICATION- B6430; B6420; C7410F; C3370J; C7104

APPENDIX 17a

ABI/INFORM Specification Sheet in Dialog

15

ABI/INFORM®

DIALOG INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

ABI/INFORM, produced by Data Courier Inc, provides coverage of the principal articles appearing in more than 660 business and management periodicals worldwide. Virtually every aspect of business is covered in the file, with particular emphasis on company case histories, competitive intelligence, new product development, and facts relevant to business decision making. Informative abstracts of about 200 words are included for all journal articles in the database. The database has no printed equivalent.

SUBJECT COVERAGE

ABI/INFORM covers the following major subject areas:

- Accounting and Auditing
- Banking
- Data Processing and Information Management
- Economics
- Finance and Financial Management
- General Management
- Health Care
- Human Resources
- Insurance
- Law and Taxation
- Management Science
- Marketing, Advertising, and Sales Management
- New Product Development
- Personnel, Employee Benefits, and Labor Relations
- Public Administration and Government
- Real Estate
- Telecommunications

SOURCES

ABI/INFORM contains bibliographic citations and abstracts for articles from over 660 management and business journals. Eighty percent of the journals covered are published in the United States. The database also includes English-language journals published in other countries. Non-English language publications have been cited on a limited basis since 1981.

DIALOG FILE DATA

Inclusive Dates:	August 1971 to the present
Update Frequency:	Weekly (approximately 825 records per update)
File Size:	Approximately 317,000 records as of June 1986

ORIGIN

ABI/INFORM is produced by Data Courier Inc. Questions concerning file content should be directed to:

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Customer Services Department
Data Courier Inc
620 South Fifth Street
Louisville, KY 40202

Telephone: 800/626-2823 (continental U.S. except Kentucky)
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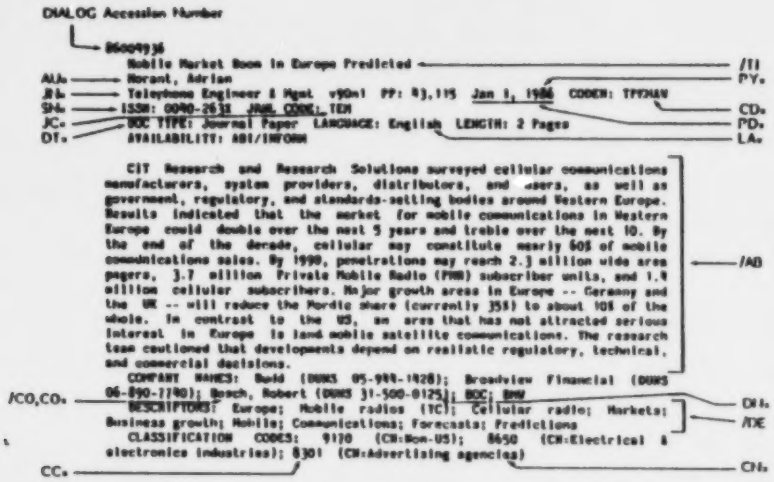
ABI/INFORM®
DIALOG FILE 15

SAMPLE RECORD


DIALOG Accession Number
86004936
Mobile Market Boom in Europe Predicted
/TI
Horant, Adrian
PY.
Telephone Engineer & Mgmt v90n1 PP: 83,115 Jan 1, 1986 CODEN: TPEMAW
CD.
ISSN: 0040-263X JRNL CODE: TEM
PD.
DOC TYPE: Journal Paper LANGUAGE: English LENGTH: 2 Pages
LA.
AVAILABILITY: ABI/INFORM
CIT Research and Research Solutions surveyed cellular communications manufacturers, system providers, distributors, and users, as well as governmental, regulatory, and standards-setting bodies around Western Europe. Results indicated that the market for mobile communications in Western Europe could double over the next 5 years and treble over the next 10. By the end of the decade, cellular may constitute nearly 60% of mobile communications sales. By 1990, penetrations may reach 2.3 million wide area pagers, 3.7 million Private Mobile Radio (PMR) subscriber units, and 1.9 million cellular subscribers. Major growth areas in Europe -- Germany and the UK -- will reduce the Nordic share (currently 35%) to about 10% of the whole. In contrast to the US, an area that has not attracted serious interest in Europe is land mobile satellite communications. The research team cautioned that developments depend on realistic regulatory, technical, and commercial decisions.
/AB
COMPANY NAMES: Rudd (DUNS 05-999-1928); Broadview Financial (DUNS 06-890-7790); Bosch, Robert (DUNS 31-500-0125); BOC; BMW
/CO,CO.
DN.
DESCRIPTORS: Europe; Mobile radios (TC); Cellular radio; Markets; Business growth; Mobile; Communications; Forecasts; Predictions
/DE
CLASSIFICATION CODES: 9170 (CN:Non-US); 8650 (CN:Electrical & electronics industries); 8301 (CN:Advertising agencies)
CC.
CN.

SEARCH OPTIONS

BASIC INDEX

SUFFIX[1]	FIELD NAME	INDEXING	SELECT EXAMPLES
/AB	Abstract	Word	S CELLULAR(3N)COMMUNICAT?
/CO	Company Name[1]	Word	S BOSCH(1N)ROBERT/CO
/DE	Descriptor[2]	Word & Phrase	S MOBILE(W)RADIOS(W)TC/DE
/TI	Title	Word	S MOBILE(W)MARKET/TI

[1]If no suffix is specified all Basic Index fields are searched.
[1]Also searchable using CO=.
[2]Also /DF.

ADDITIONAL INDEXES

PREFIX	FIELD NAME	INDEXING	SELECT EXAMPLES
AU=	Author	Phrase	S AU=MORANT, ADRIAN?
CC=	Classification Code	Phrase	S CC=9170
CD=	CODEN	Phrase	S CD=TPEMAW
CN=	Classification Name	Phrase	S CN=ADVERTISING AGENCIES
CO=	Company Name[3]	Phrase	S CO BROADVIEW FINANCIAL?
DN=	D-U-N-S Number	Phrase	S DN=05 944-1428
DT=	Document Type[4]	Phrase	S DT=JOURNAL PAPER
JC=	Journal Code	Phrase	S JC=TEM
JN=	Journal Name	Phrase	S JN=TELEPHONE ENGINEER & MGMT
LA=	Language[5]	Phrase	S LA=ENGLISH
PD=	Publication Date[6]	Phrase	S PD=860101
PY=	Publication Year	Phrase	S PY=1986
SN=	International Standard Serial Number (ISSN)	Phrase	S SN=0040-263X
UD=	Update	Phrase	S UD=8601W1

[3]Also searchable using /CO.
[4]DT=JOURNAL PAPER is the only document type used at this time.
[5]Over 99% of the records are indexed to LA=ENGLISH.
[6]Also cascaded to four digits, e.g., PD=8601.

LIMITING

Sets and terms may be limited by Basic Index suffixes, i.e., /AB, /CO, /DE, /DF, /TI (e.g., SELECT S4/TI), as well as by the features listed below:

SUFFIX	FIELD NAME	EXAMPLE
None	Publication Year	S S5/1986
None	DIALOG Accession Number	S S4/86000001-99999999

SORTING

SORTABLE FIELDS	EXAMPLES
Online (SORT) and offline (PRINT): AU, CO, JC, JN.	SORT 4/ALL/AU/TI PRINT 5/3/ALL/JN

FORMAT OPTIONS

NUMBER	RECORD CONTENT
Format 1	DIALOG Accession Number
Format 2	Full Record except Abstract
Format 3	Bibliographic Citation
Format 4	Full Record with Tagged Fields
Format 5	Full Record
Format 6	Title and DIALOG Accession Number
Format 7	Bibliographic Citation and Abstract
Format 8	Title and Indexing (Company Names, Descriptors, Classification Codes and Names)

DIRECT RECORD ACCESS

FIELD NAME	EXAMPLES		
DIALOG Accession Number	TYPE 86004936/3	DISPLAY 86012975/5	PRINT 850398726

APPENDIX 17b

Computer Database Specification Sheet in Dialog

275

THE COMPUTER DATABASE™

DIALOG® INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

THE COMPUTER DATABASE provides wide-ranging information on computers, telecommunications, and electronics. Coverage ranges from detailed consumer information on products, companies, and people, to technical information on programming and circuit design. THE COMPUTER DATABASE is designed to answer the questions of business and computer professionals about hardware, software, peripherals, and services. Indexing is done from a hierarchy of descriptors with broader, narrower, and related terms selected to reflect the subject matter covered. The special DIALOG online thesaurus feature is available to assist searchers in determining appropriate subject terms.

SUBJECT COVERAGE

THE COMPUTER DATABASE provides coverage of the following computer-related areas:

- Business and Industry Applications
- Company Names and Information
- Computer Games
- Computer Graphics
- Computer Systems and Equipment
- Consumer Information
- Database Management
- Electronics, Computer-Related
- Financial Information on Computers
- Hardware Design, Development, Reviews
- Home Computers
- Interfaces
- Letters to the Editor
- Microprocessors
- New Products
- Performance Evaluation
- Programming Languages
- Operating Systems
- Prototyping
- Robotics
- Software Design and Development
- Software Reviews
- Telecommunications
- Word Processing

SOURCES

THE COMPUTER DATABASE currently indexes approximately 90 of the most current and widely circulated English-language journals and magazines on computers, telecommunications, and electronics. Prior to January 1986, approximately 500 periodicals were covered, as well as proceedings, books, and newsletters. All articles from these publications, excluding book reviews, notes, editorials, and event announcements, are indexed and abstracted.

DIALOG FILE DATA

Inclusive Dates:	January 1983 to the present
Update Frequency:	Every two weeks (approximately 1,500 records per update) Daily updates in NEWSEARCH™, File 211
File Size:	Approximately 185,000 records as of July 1986

ORIGIN

THE COMPUTER DATABASE is produced by Information Access Company. Questions concerning file content should be directed to:

Online Services
Information Access Company
11 Davis Drive
Belmont, CA 94002

Telephone: 800/227-8431
415/591-2333
Telex: 1561004 INFO UT
DIALMAIL: 12603

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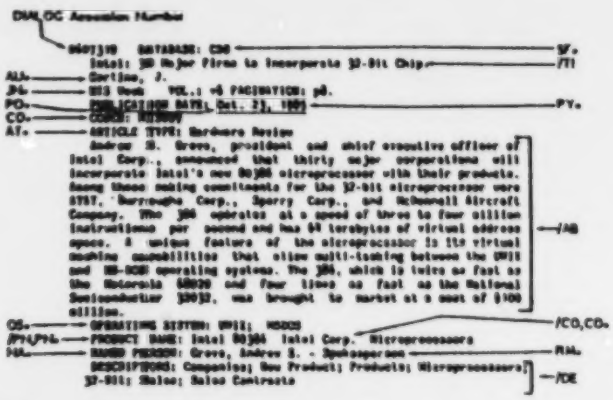
THE COMPUTER DATABASE™
DIALOG FILE 275

SAMPLE RECORD



SEARCH OPTIONS

BASIC INDEX

SUFFIX*	FIELD NAME	INDEXING	SELECT EXAMPLES
/AB	Abstract	Word	S 64(W)TERABYTE?/AB
/CO	Company Name[1]	Word	S INTEL/CO
/DE	Descriptor[2]	Word & Phrase	S SALES(W)CONTRACT?/DE S NEW PRODUCT/DE
/PN	Product Name[3]	Word	S INTEL(W)80386/PN
/TI	Title	Word	S 32(W)BIT(W)CHIP/TI

*If no suffix is specified all Basic Index fields are searched.
1Also searchable using CO= (phrase-indexed)
2Also /DF
3Also searchable using PN= (phrase-indexed)

ADDITIONAL INDEXES

PREFIX	FIELD NAME	INDEXING	SELECT EXAMPLES
AT=	Article Type	Phrase	S AT=HARDWARE REVIEW
AU=	Author	Phrase	S AU=CORTINO, J?
CO=	CODEN	Phrase	S CO=MISWD9
CO=	Company Name[4]	Phrase	S CO=INTEL CORP?
GC=	Geographic Code	Phrase	S GC=NNUSLNY
GN=	Geographic Name	Word & Phrase	S GN=(NEW(W)YORK) S GN=NEW YORK (STATE)
JN=	Journal Name	Phrase	S JN=MIS WEEK
NA=	Named Person[5]	Phrase	S NA=GROVE, ANDREW?
OS=	Operating System	Phrase	S OS=MSDOS
PD=	Publication Date	Phrase	S PD=851023
PL=	Program Language	Phrase	S PL=ASSEMBLY LANGUAGE
PN=	Product Name[6]	Phrase	S PN=INTEL 80386
PY=	Publication Year	Phrase	S PY=1985 1986
RM=	Role Modifier	Phrase	S RM=SPOKESPERSON
SC=	Standard Industrial Classification (SIC) Code	Phrase	S SC=3573
SF=	Special Feature	Phrase	S SF=SCREEN DISPLAYS
SF=	Subfile[7]	Phrase	S SF=CDB
TS=	Ticker Symbol	Phrase	S TS=INTC
UD=	Update	Phrase	S UD=8511:9999

4Also searchable using /CO (word-indexed)
5Prior to January 1986 only. Beginning in 1986, searchable in the Basic Index (no suffix)
6Also searchable using /PN (word-indexed)
7Isolates records that are unique to File 275 among the other IAC databases

LIMITING

Sets and terms may be restricted by Basic Index suffixes, i.e., /AB, /CO, /DE, /DF, /PN, /TI (e.g., S SS/DE), as well as by the features listed below.

SUFFIX	FIELD NAME	EXAMPLES
None	Publication Year	S S12/1985:1986 S INTEL/1986
None	DIALOG Accession Number	S S7/1088401-9999999

SORTING

SORTABLE FIELDS	EXAMPLES
Online SORT and offline (PRINT) AU, JN, PY, TI	SORT S8/ALL/JN/PY,D PRINT S3/7/1-55/AU

FORMAT OPTIONS

NUMBER	RECORD CONTENT	NUMBER	RECORD CONTENT
Format 1	DIALOG Accession Number	Format 5	Full Record
Format 2	Full Record except Abstract	Format 6	Title and Subtitle
Format 3	Bibliographic Citation	Format 7	Bibliographic Citation and Abstract
Format 4	Full Record with Tagged Fields	Format 8	Title, Product Name, Named Person, and Indexing

DIRECT RECORD ACCESS

FIELD NAME	EXAMPLES		
DIALOG Accession Number	TYPE 1184229/4	DISPLAY 1183729/7	PRINT 1183229/5

APPENDIX 17c

INSPEC Specification Sheet in Dialog

INSPEC

DIALOG® INFORMATION RETRIEVAL SERVICE

FILE DESCRIPTION

INSPEC (Information Services for Physics, Electronics, and Computing) corresponds to the four Science Abstracts printed publications: *Physics Abstracts, Electrical and Electronics Abstracts, Computer and Control Abstracts,* and *IT Focus: Update on Information Technology*. The *Science Abstracts* family of abstract journals began publication in 1898, and now forms the largest English-language database in the fields of physics, electrical engineering, electronics, computers, control engineering, and information technology. DIALOG File 13 covers the years 1977 to the present; File 12 covers 1969 to 1976. Approximately 15 percent of the database's source publications are in non-English languages; all articles are abstracted and indexed in English. Author-prepared abstracts are used when available.

The INSPEC database utilizes controlled vocabulary and classification codes for subject indexing. The special DIALOG online thesaurus feature is available to assist searchers in determining appropriate subject terms and codes.

SUBJECT COVERAGE

The principal subject areas within each major subfile are:

Physics (Subfile A)
- Acoustics
- Astronomy and Astrophysics
- Atomic and Molecular Physics
- Condensed Matter: Electrical, Magnetic, and Optical Properties
- Condensed Matter: Structure, Thermal, and Mechanical Properties
- Elementary Particle Physics
- Gases, Fluid Dynamics and Plasmas
- General Topics
- Geophysics
- Instrumentation and Measurement
- Materials Science
- Mathematics and Mathematical Physics
- Nuclear Physics
- Optics
- Physical Chemistry

Electrical Engineering and Electronics (Subfile B)
- Circuits and Components
- Electromagnetic Fields and Waves
- Electronic Devices and Materials
- Electronic Instrumentation
- Power Systems and Applications
- Telecommunications

Computer and Control (Subfile C)
- Computer Hardware
- Control Technology
- Software and Applications
- Systems and Control Theory

Information Technology (Subfile D)
- Business and Industry Applications
- Communications, Computing and Systems
- General and Management Applications
- Office Automation

SOURCES

Journals account for approximately 78 percent of the INSPEC source publications. As of May 1986, INSPEC scans over 3,900 journals and serials, of which 730 are abstracted cover-to-cover. Other source materials include: conference proceedings and papers (approximately 20 percent), books, dissertations, and reports. File 12 also contains a limited number of references to patents.

DIALOG FILE DATA

	File 12	File 13
Inclusive Dates:	1969 to 1976	1977 to present
Update Frequency:	Closed file	Monthly (approximately 20,000 records per month)
File Size:	990,837 records	Approximately 1,700,000 records as of July 1986

ORIGIN

INSPEC is produced by the Information Division of the Institution of Electrical Engineers (IEE). Questions concerning file content should be directed to either of the following offices:

INSPEC Marketing Department
IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854-4150
U.S.A.
Telephone: 201/981-0060 ext. 380
DIALMAIL: 11450
Telex: 833233
Fax: (201)981-0027

INSPEC Tape and Online Services
IEE
Station House, Nightingale Road
Hitchin Herts SG5 1RJ
England
Telephone: 0462 53331
DIALMAIL: 11472
Telex: 825962
Fax: (0462)59122

INSPEC data may not be duplicated in hardcopy or stored or duplicated in machine-readable form without written authorization from the Institution of Electrical Engineers, London, except that data may be temporarily stored (for up to one month) in machine-readable form for formatting or editing and that limited reproduction of printed output up to twenty-five (25) copies is permitted for distribution within the customer's organization only. Under no circumstances may copies made under this provision be offered for resale.

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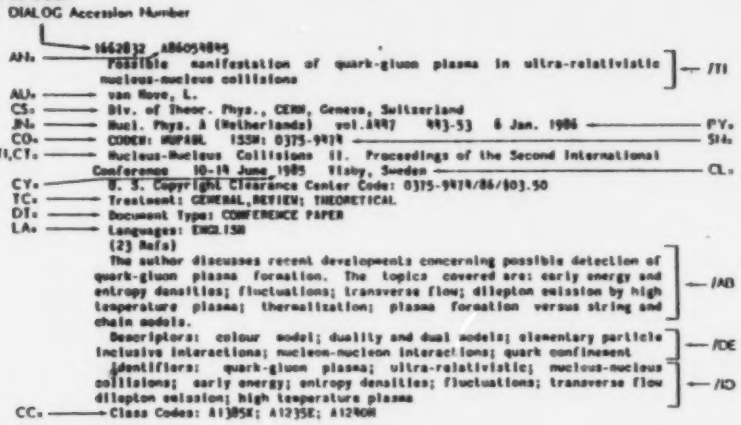
DIALOG FILES 12, 13

SAMPLE RECORD


DIALOG Accession Number
1662832 A86054845
AN: Possible manifestation of quark-gluon plasma in ultra-relativistic nucleus-nucleus collisions
AU: van Hove, L.
CS: Div. of Theor. Phys., CERN, Geneva, Switzerland
JN: Nucl. Phys. A (Netherlands) vol.A447 443-53 6 Jan. 1986
CO: CODEN: NUPABL ISSN: 0375-9474
/TI,CT: Nucleus-Nucleus Collisions II. Proceedings of the Second International Conference 10-14 June 1985 Visby, Sweden
CL:
CY: 0. S. Copyright Clearance Center Code: 0375-9474/86/$03.50
TC: Treatment: GENERAL,REVIEW; THEORETICAL
DT: Document Type: CONFERENCE PAPER
LA: Languages: ENGLISH
(23 Refs)
The author discusses recent developments concerning possible detection of quark-gluon plasma formation. The topics covered are: early energy and entropy densities; fluctuations; transverse flow; dilepton emission by high temperature plasma; thermalization; plasma formation versus string and chain models.
Descriptors: colour models; duality and dual models; elementary particle inclusive interactions; nucleon-nucleon interactions; quark confinement
Identifiers: quark-gluon plasma; ultra-relativistic; nucleus-nucleus collisions; early energy; entropy densities; fluctuations; transverse flow dilepton emission; high temperature plasma
CC: Class Codes: A1385K; A1235E; A1240R
PY:
SN:
/TI
/AB
/DE
/ID

SEARCH OPTIONS

BASIC INDEX

SUFFIX*	FIELD NAME	INDEXING	SELECT EXAMPLES
/AB	Abstract	Word	S STRING(1W)CHAIN/AB
/DE	Descriptor[1]	Word & Phrase	S ELEMENTARY(W)PARTICLE/DE
			S COLOUR MODEL/DE
/ID	Identifier[2]	Word & Phrase	S TRANSVERSE(W)FLOW/ID
			S ULTRA-RELATIVISTIC/ID
/TI	Title	Word	S QUARK(W)GLUON/TI

*If no suffix is specified all Basic Index fields are searched.
1Also /IF.
2Also /IF.

ADDITIONAL INDEXES

PREFIX	FIELD NAME	INDEXING	SELECT EXAMPLES
AN=	INSPEC Abstract Number	Phrase	S AN=A86054845
AU=	Author	Phrase	S AU=VAN HOVE, L.
BN=	International Standard Book Number (ISBN)	Phrase	S BN=0 13 022005 1
CC=	Classification Code	Phrase	S CC=A1385K
CL=	Conference Location	Word	S CL=(VISBY AND SWEDEN)
CO=	CODEN	Phrase	S CO=NUPABL
CS=	Corporate Source	Word	S CS=(CERN AND GENEV?)
CT=	Conference Title[3]	Word	S CT=(NUCLEUS(W)COLLISIONS)
CY=	Conference Year	Phrase	S CY=1985
DT=	Document Type	Phrase	S DT=CONFERENCE PAPER
JN=	Journal Name	Phrase	S JN=NUCL. PHYS. A (NETHERLANDS)
LA=	Language	Phrase	S LA=FRENCH
PA=	Patent Assignee[4]	Word	S PA=(NIPPON(W)OAXXI)
PI=	Patent Country[4]	Word & Phrase	S PI=(SOUTH(W)AFRICA)
			S PI=NEW ZEALAND
PN=	Patent Number[4]	Phrase	S PN=1422875
PU=	Publisher[5]	Word	S PU=(SUTTHOFF(1W)NOORDHOOF)
PY=	Publication Year	Phrase	S PY=1985:1986
RN=	Report Number	Phrase	S RN='AECL-4438/2'
SF=	Subfile	Phrase	S SF=A
SN=	International Standard Serial Number (ISSN)[6]	Phrase	S SN=0375-9474
TC=	Treatment Code	Phrase	S TC=GENERAL,REVIEW
			S TC=THEORETICAL
UD=	Update	Phrase	S UD=8522:9999

3Also searchable using /TI.
4File 12 only.
5Available for conference proceedings and books only.
6Beginning in January 1983.

LIMITING

Sets and terms may be limited by Basic Index suffixes i.e., /AB, /DE, /DF, /ID, /IF, /TI (e.g., S55/DE), as well as by the features listed below:

SUFFIX	FIELD NAME	EXAMPLES
None	Publication Year	S S12/1985:1988
None	DIALOG Accession Number	S S5/1585709 9999999
/ENG	English Language	S S9/ENG
/NONENG	Non-English Language	S QUARK?/NONENG
/ART	Journal Article	S S8/ART
/NAR	Non-Journal Article	S DILEPTON/NAR

SORTING

SORTABLE FIELDS	EXAMPLES
Online SORT and offline (PRINT)	SORT S12/ALL/JN/PY D
AN, AU, CC, CS, JN, PY, TI	PRINT S6/7/1-55/AU

FORMAT OPTIONS

NUMBER	RECORD CONTENT	NUMBER	RECORD CONTENT
Format 1	DIALOG Accession Number	Format 5	Full Record
Format 2	Full Record Except Abstract	Format 6	Title, Conference Title, Journal Name, and INSPEC Abstract Number
Format 3	Bibliographic Citation	Format 7	Full Record Except Indexing
Format 4	Full Record with Tagged Fields	Format 8	Title, Conference Title, and Indexing

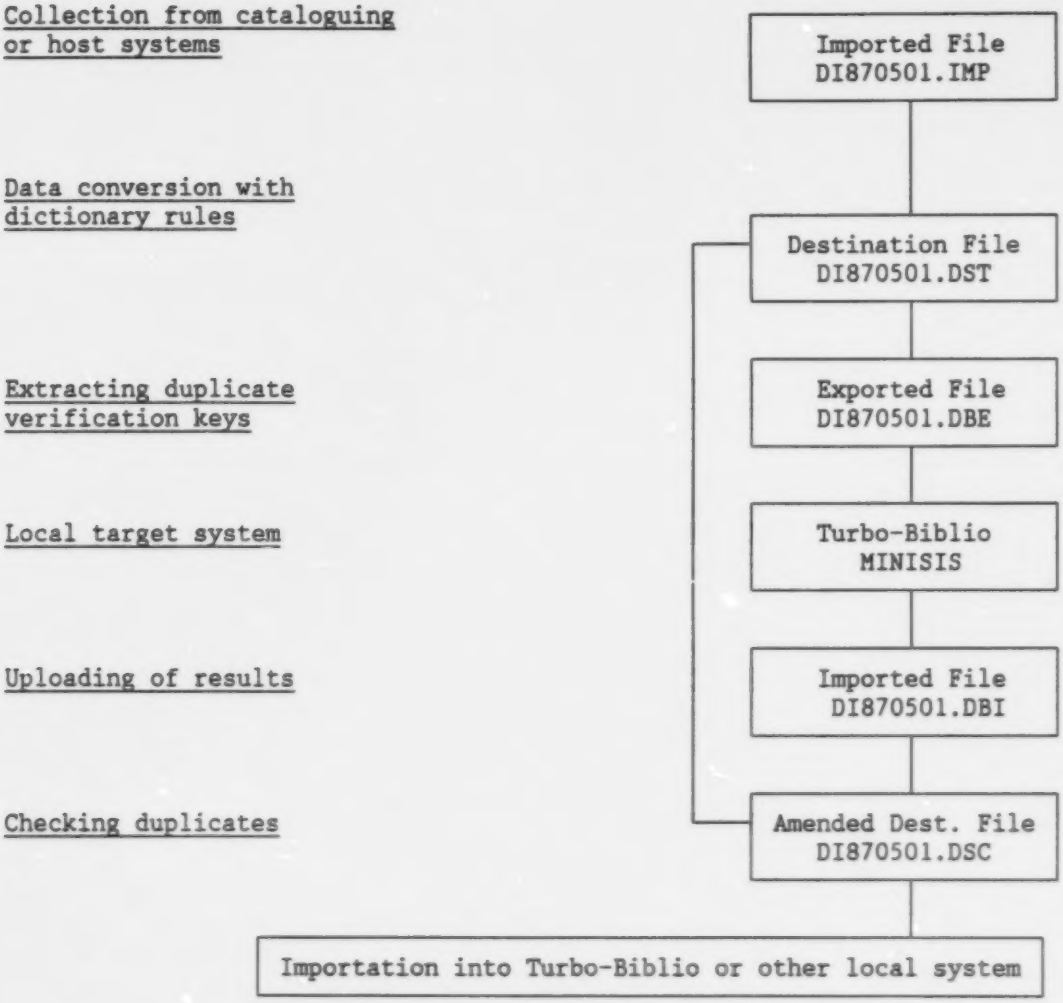
DIRECT RECORD ACCESS

FIELD NAME	EXAMPLES		
DIALOG Accession Number	TYPE 1662832/4	DISPLAY 1662832/7	PRINT 1658433/5

APPENDIX 18

Turbo-Biblio - Procedure for Checking Duplicates

Turbo-Biblio - Procedure for Checking Duplicates



Source: ASC Biblio-Information Inc. Logiciel Turbo-Biblio - Documentation de l'utilisateur, (interim version), n.p., December 1986, p. B.4-17.

APPENDIX 19a

ABI/INFORM Fields and
Equivalent Fields Created in MINISIS

ABI/INFORM Fields and Equivalent Fields Created in MINISIS

Name of Field in ABI/INFORM	Label of Field to be created in MINISIS	Length of Field to be created in MINISIS	Repetitive Field
FN- File name	A010	50 characters	No
TI- Title	A400	400 characters	No
AU- Author	B670	80 characters	Yes
JN- Journal name	B730	160 characters	No
VO- Volume	B430	20 characters	No
PG- Pagination	B470	20 characters	No
PD- Publication date	B110	20 characters	No
CD- Coden	A250	6 characters	No
SN- ISSN	A260	20 characters	No
DT- Document type	A170	30 characters	No
LA- Language	A230	20 characters	No
AV- Availability	B030	160 characters	No
AB- Abstract	A990	2000 characters	No
CO- Company name	B870	250 characters	Yes
DN- D-U-N-S number	B890	60 characters	Yes
DE- Descriptor	A810	80 characters	Yes
CC- Classification code	B850	160 characters	No

APPENDIX 19b

Computer Database Fields and
Equivalent Fields Created in MINISIS

Computer Database Fields and Equivalent Fields Created in MINISIS

Name of Field in Computer Database	Label of Field to be created in MINISIS	Length of Field to be created in MINISIS	Repetitive Field
FN- File name	A010	50 characters	No
TI- Title	A400	400 characters	No
AU- Author	C670	80 characters	Yes
CS- Corporate source	C690	200 characters	No
JN- Journal name	C730	160 characters	No
VL- Volume	C430	20 characters	No
IS- Issue	C450	20 characters	No
PG- Pagination	C470	20 characters	No
PD- Publication date	C490	20 characters	No
SO- Source	C710	160 characters	No
PY- Publication year	C110	4 characters	No
CT- Conference title	C750	400 characters	No
CL- Conference location	C770	40 characters	No
CD- Conference date	C790	30 characters	No
BN- ISBN	A240	20 characters	No
CO- Coden	A250	6 characters	No
SN- ISSN	A260	20 characters	No
CP- Country of publication	C150	80 characters	No
LA- Language	A230	20 characters	No
DT- Document type	A170	30 characters	No
AT- Article type	C190	50 characters	No
SF- Special features	C150	80 characters	No
AB- Abstract	A990	2000 characters	No
PN- Product name	C810	300 characters	No
TS- Ticker symbol	C830	10 characters	No
SC- SIC code	C850	10 characters	No
CO- Company name	C870	250 characters	No
DN- D-U-N-S number	C890	80 characters	No
GN- Geographic name	C910	80 characters	No
OS- Operating system	C930	80 characters	No
PL- Program language	C950	80 characters	No
NA- Named persons	C970	80 characters	No
DE- Descriptor	A810	80 characters	Yes

APPENDIX 19c

INSPEC Fields and
Equivalent Fields Created in MINISIS

INSPEC Fields and Equivalent Fields Created in MINISIS

Name of Field in INSPEC	Label of Field to be created in MINISIS	Length of Field to be created in MINISIS	Repetitive Field
FN- File name	A010	50 caractères	Non
TI- Title	A400	400 caractères	Non
AU- Author	A670	80 caractères	Oui
CS- Corporate source	A690	300 caractères	Oui
JN- Journal name	A730	700 caractères	Non
PY- Publication year	A110	20 caractères	Non
CT- Conference title	A750	400 caractères	Non
CL- Conference location	A770	40 caractères	Non
CY- Conference year	A790	30 caractères	Non
PU- Publisher	A450	100 caractères	Non
PG- Pagination	A470	50 caractères	Non
BN- ISBN	A240	20 caractères	Non
CO- Coden	A250	6 caractères	Non
SN- ISSN	A260	20 caractères	Non
DT- Document type	A170	30 caractères	Non
LA- Language	A230	80 caractères	Non
TC- Treatment code	A190	80 caractères	Non
AB- Abstract	A990	2000 caractères	Non
DE- Descriptor	A810	80 caractères	Oui
ID- Identifier	A830	80 caractères	Oui
CC- Classification code	A850	160 caractères	Non

APPENDIX 20

ABI/INFORM: Legal Aspects of Downloading

August 21, 1987

Gilles Deschatelets
Professor agrege
Ecole de Bibliotheconomie
et des Sciences de L'Information
Universite de Montreal
C.P. 6128 - Svcc. "A"
Montreal, Quebec H3C 3J7
Canada

Dear Mr. Deschatelets:

Thank you for your inquiry about downloading.

UMI/Data Courier has established a policy on downloading information from the ABI/INFORM, Business Dateline and Pharmaceutical News Index databases. The policy is specifically for cases where the user is storing records over a period of time. In these cases, written permission is required from UMI/Data Courier.

If you wish to download information for use over a period of time, we ask the following:

- Send a request in writing to UMI/Data Courier.
- Include a brief description of what the downloading is for and how many records are involved.
- Please do not download until we have given you written permission.
- Approval is given only for use within your organization by employees, faculty, staff or students.

UMI/Data Courier typically gives written permission for a 12-month period. If you agree that your organization will not resell the data, develop in-house databases, or prepare newsletters or books based on our records for sale or distribution outside, permission is generally granted free of charge.

If you have additional questions about any use of our data, downloaded or in any other form, please contact me.

Sincerely,

Lynn M. Thomason

Lynn M. Thomason
Client Services Supervisor

LMI/lar

August 21, 1987

Lucie Carmel
Research Assistant
Ecole de bibliotheconomie
et des Sciences de l'information
C.P. 6128, Succursale A
Montreal, Quebec H3C 3J7
Canada

Dear Ms. Carmel:

We are currently in beta test with the ABI/INFORM CD-ROM version at 12 sites. We are gathering feedback from the tests and are initially pleased with the results. We do plan to make some search software modifications before the product is available.

No date has been set for release of the product and the pricing has not been set.

We will take your name and address and will send you details about the product when they are available.

Sincerely,

Lynn M. Thomason

Lynn M. Thomason
Supervisor, Client Services

LMT:mr

APPENDIX 21

Computer Database: Legal Aspects of Downloading and Rental/Purchase Costs

INFORMATION
ACCESS
COMPANY

1 Davis Drive
Belmont, California 94002
415/591-2333
800/227-8431

March 4, 1988

Gilles Deschatelets
Ecole de Biblioteconomie et
des Science de l'Information
Universite de Montreal
C.P. 6128 - Succursale "A"
Montreal, Quebec H3C 3J7

Dear M. Deschatelets,

Thank you for your letter of August 3, 1987, requesting information about IAC's policy on downloading and re-use of Computer Database (tm) records. Please accept our apologies for the delay in our response.

In answer to items 1 through 3 of your letter, Information Access company recognizes that any user with a personal computer has the capability of downloading online data for later reformatting and reference. Our pricing scheme takes this into account, and for one-time use of our records, there is no additional charge. However, IAC's copyright policy permits re-use only, not re-sale of downloading data. For your information, I have attached our standard form letter, which spells out IAC's policy.

Several academic institutions in the United States have mounted IAC databases on their mainframes, along with online catalogs and other reference information. In exchange for the annual subscription fee, they can offer free, unlimited use to students and faculty.

So far, none of the tape subscribers alters or adds to the data we send them. If you have specific intentions to add your own enhancements to IAC's data, such as French descriptors, please describe them in detail in a letter. We may be able to incorporate them as amendments to our tape subscription license agreement should you decide to lease databases from us.

Computer Database as well as five other IAC files are available for lease for large-volume use on a university system. Detailed information on this program is attached.

Cordially,

Linnea Christiani

Linnea Christiani
Product Manager, Online/Corporate Markets

cc: Jinna Gibson, Jeff Zane

INFORMATION
ACCESS
COMPANY

1 Davis Drive
Belmont, California 94002
415/591-2333
800/227-8431

March 4, 1988

Gilles Deschatelets
Ecole de Biblioteconomie et
des Science de l'Information
Universite de Montreal
C.P. 6128 - Succursale "A"
Montreal, Qubec H3C 3J7

Dear M. Deschatelets,

Thank you for your interest in Information Access Company's online databases. We grant you permission to record the results of your searches on the IAC databases for limited use within your organization. Please observe our policy regarding downloading and reuse of data when presenting search results to your users:

The IAC databases should always be presented in capital letters with the appropriate trademark "tm" or registered "r" symbol. The IAC databases are: COMPUTER DATABASE (tm), INDUSTRY DATA SOURCES (tm), LEGAL RESOURCE INDEX (tm), MAGAZINE INDEX (tm), MAGAZINE ASAP (tm), MANAGEMENT CONTENTS (r), NATIONAL NEWSPAPER INDEX (tm), NEWSEARCH (tm), NEWSWIRE ASAP (tm), TRADE & INDUSTRY INDEX (tm), and TRADE & INDUSTRY ASAP (tm).

The copyright statement should read "COPYRIGHT 1988, INFORMATION ACCESS COMPANY, BELMONT, CALIFORNIA 94002."

If you have any questions about this policy, please do not hesitate to call me at 800-227-8431.

Cordially,

Linnea Christiani

Linnea Christiani
Product Manager
Online/Corporate Markets

Attachment: Online brochure

INFORMATION
ACCESS
COMPANY

11 Davis Drive
Belmont, California 94002
415/591-2333
800/227-8431

August 18, 1987

Lucie Carmel
Research Assistant
University of Montreal
Case Postale 6128, Succursale A
Montreal, Quebec H3C 3J7
CANADA

Dear Ms. Carmel:

Thank you for your inquiry about Information Access Company database tape leases.

Information Access Company has recognized that a number of our customers have developed the capability to process, maintain and retrieve large volumes of data similar to the major time-sharing companies. We feel that these organizations should not be required to access our databases via distribution methods such as commercial online services.

The following databases are now available on an annual lease basis: COMPUTER DATABASE™, MAGAGEMENT CONTENTS®, TRADE & INDUSTRY INDEX™, MAGAZINE INDEX™, NATIONAL NEWSPAPER INDEX™, and LEGAL RESOURCE INDEX™. They can be maintained on your own system and can be used internally at a fixed annual cost. You can make these databases available according to your schedule and process unlimited searches or current awareness profiles.

The basic annual subscription price is $8,000 per database. Database backfiles can be leased for a one-time fee of $ 16,000. Additional databases and backfiles are available at reduced rates. Database descriptions and tape specifications are enclosed.

Please call me at 800/227-8431 if you would like additional information.

Sincerely,

Susan O. Higgins

Susan O. Higgins
Online Marketing Manager

SOH:jlr

INFORMATION ACCESS COMPANY
11 Davis Drive, Belmont, California 94002 415/591-2333 800/227-8431

DATABASE TAPE LEASES
ACADEMIC PRICE LIST (PER SITE)
January 1988

Annual Subscription:

Current year plus immediate past year

Single database - one location use	$ 9,000
Each additional database - one location use	$ 8,000
Monthly tapes containing MAGAZINE COLLECTION and BUSINESS COLLECTION cartridge frame numbers	No additional charge
Multiple databases (any four)	$ 25,000

Backfiles:

Complete backfile - single database	$ 16,000
Complete backfile - each additional database	$ 12,000

For further information please contact Jeffrey Zane, Marketing Manager, at 800/227-8431.

NOTE: Special Pricing is available for multiple sites.

Prices subject to change without notice.

APPENDIX 22

INSPEC: Legal Aspects of Downloading and Rental/Purchase Costs

INSPEC/IEEE SERVICE CENTER
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: (201) 981-0060

August 18, 1987

Gilles Deschatelets
Professeur agrege
Ecole de bibliotheconomie et
des sciences de l'information
Universite de Montreal
C.P. 6128, Succursale A
Montreal, Quebec
Canada H3C 3J7

Dear M. Deschatelets,

Thank you for your request for information concerning downloading from the INSPEC database.

I enclose a copy of our Downloading policy statement which outlines three major categories of use. The use you describe appears to fall under category B. The fee for that continues to be $0.32 per record with a minimum of 300 records. The terms and conditions are also given on the back of the Downloading order form which I also enclose. We do not have any objection to new fields being added. The policy only covers internal usage. If you have any other proposals we would require full details for consideration.

Please do not hesitate to contact me if you need any further information.

Yours sincerely,

Jim Ashling

Jim Ashling
Online Training Manager

JA/mt

INSPEC
The Institution of Electrical Engineers

Downloading from the INSPEC Database

The following statement is reprinted from INSPEC Matters no. 38, September 1984.

With the increasing use of devices such as microcomputers, more and more users of online databases have the capability to 'download' from these databases. By 'downloading' is meant the copying of data in machine-readable form from a database onto a local electronic storage device.

We sympathise with the desire of users of the INSPEC Database to make the most effective use of the capabilities of the new systems and equipment. Our aim in this statement is to establish a framework designed to allow users to make the fullest use of the Database while protecting INSPEC's essential rights as producer of the Database and ensuring our continued ability to maintain it.

In determining policy we have looked at the type of use to be made of the data rather than the act of downloading itself.

Three categories of use are distinguished:

A Temporary storage — at no extra charge

B Long-term storage and reuse at the downloading site — on payment of a downloading charge

C Other uses e.g. multiple copying of data, use for resale etc. — subject to specific written agreement and payment of appropriate charges to be negotiated.

These categories of use and the terms and conditions applying to them are described in more detail below:

Category A — Temporary storage

Search output received online may be stored temporarily (for no more than 4 weeks) in electronic form for purposes of editing, reformatting or printing.

Up to 25 copies of the printed output may be made for distribution within the customer's organisation only. Such copies may not be offered for sale.

An information broker who carries out a search of the INSPEC Database on behalf of a client may supply a printed copy of the results to that client.

No additional charge, over and above the normal online service and royalty charges is made for this Category A use. Such use is now included in the statement of allowed uses which INSPEC requires online hosts to include in customer contracts.

Category B — Long-term storage and reuse at the downloading site

INSPEC offers permission (subject to acceptance of the written conditions and payment of the appropriate fees) for downloading and long-term storage of data for use within the user's organisation.

We believe that most users would prefer downloading arrangements to form part of the overall service provided by online service suppliers. We expect therefore to work with the online service suppliers to set up appropriate arrangements: an example is the 'Download' facility currently offered by the ESA/IRS service.

(continued overleaf)

In the meantime we have drawn up a form of agreement to allow downloading and reuse of data from the INSPEC Database.

The principal conditions are:

1. Use of the data is restricted to employees of the customer organisation at the downloading site.
2. Payment will be required at the start of each calendar year for the number of records which the customer estimates he will download in the course of that year, with adjustment made for shortfall or excess in the preceding year. The minimum annual payment will be for the equivalent of 300 records. The payment for data to be downloaded in 1984 and 1985 will be 32¢ per record or part of a record. This payment is independent of the charges made for the online service itself.
3. In return for payment of the downloading charge, the customer has the right to continued use of the relevant records without further payment, subject to the terms and conditions of the downloading agreement.
4. The customer acknowledges that the copyright in the data downloaded from the INSPEC Database is the sole property of the Institution of Electrical Engineers (IEE) and will ensure that the IEE's copyright is made known to users of the data. Suitable acknowledgement of the copyright and source is required for all printed or copied data.
5. Data may not be resold.

Requests for further details and copies of the Downloading order form should be addressed to INSPEC Marketing Department.

Category C — Other uses e.g. multiple copying of data, use for resale etc.

The range of possible uses which customers may wish to make of data derived from the INSPEC Database is too wide to specify but includes:

personal or specialised databases
information bulletins
bibliographies or literature reviews

INSPEC welcomes enquiries on use of data from the Database whether for personal, internal use, or for resale.

Enquiries should be addressed to:

INSPEC Marketing Department,
Station House,
Nightingale Road,
Hitchin, Herts. SG5 1RJ.
ENGLAND
Telephone (0462) 53331.

INSPEC/IEEE Service Center,
445 Hoes Lane,
Piscataway,
N.J. 08854,
USA.
Telephone (201) 981 0060.

THE INSTITUTION OF ELECTRICAL ENGINEERS

ORDER FORM
USA

178

INSPEC DOWNLOADING ORDER

Please invoice for the estimated number of INSPEC records to be downloaded in accordance with the terms and conditions specified.

Estimated 198_ Downloading: [ ] **records** *(@)* [ ] = [ ].

***The Minimum annual charge is for 300 records.**

Customers Downloading Location	
Organization Name	
Division / Department	
Number and Street	City
State Zip	Contact Person
Telephone	Telex
BILLING ADDRESS (if different from above)	
Organization Name	
Division / Department	
Number and Street	City
State Zip	Contact Person
Telephone	Telex
AUTHORIZED (PROCUREMENT) SIGNATURE Date	
NAME (Typed or printed)	Title
Purchase Order No. (If any)	Customer No. (If Known)

INSTRUCTIONS

Please type or print with ballpoint pen.

Fill in boxed areas and SIGN

Retain "Customer's Copy"

Return all other copies to:

Jim Ashling
~~Mrs. G. Ferrero,~~
INSPEC,
IEEE Service Center,
445, Hoes Lane,
Piscataway,
NJ 08854
Tel: (201) 981-0060 Ext. 376

ORIGINAL

TERMS AND CONDITIONS

1. The Institution of Electrical Engineers (IEE) grants the Customer the non-exclusive right to download information from the INSPEC Database. The Customer agrees to use downloaded INSPEC information only as permitted in these terms and conditions. "Downloading" here means capturing information in computer-readable form from the INSPEC Database whether the information is made available by the IEE directly or by an online service supplier under an IEE licence. It does not include the use of a "Download" facility on which the service supplier collects a "Download" royalty on behalf of the IEE or copying information from magnetic tapes licensed to the Customer by the IEE. "Downloading" also means creating (by keying or other means) a computer-readable form of INSPEC information from a corresponding printed form or microform.

2. In Downloading from an online service supplier, the Customer agrees to adhere to the usage terms and conditions of that supplier.

3. The Customer agrees to download INSPEC information at the "Customer Downloading Location" identified overleaf only. The Customer also agrees that the downloaded INSPEC information may only be made available to employees, staff, students or bona fide consultants of the Customer or of wholly owned subsidiaries of the Customer and then only at the "Customer Downloading Location".

4. The multiple production of printed copies of downloaded INSPEC records or parts of records is not permitted. An INSPEC record is a discrete item from the INSPEC Database representing a single bibliographic item.

5. At the beginning of each calendar year the IEE shall invoice the Customer, at the IEE's then prevailing rate, for the estimated number of INSPEC records or parts thereof downloaded in the said year, with an adjustment made, where appropriate, for the shortfall or excess of records downloaded in the preceding year. There shall be an annual minimum payment equivalent to 300 records. No refunds will be made except under the provisions of Clause 10.(a). Invoiced amounts are due on receipt of the invoice and shall be paide in full in the currency stated on the invoices delivered by the IEE.

6. The provisions of all sections of this Order remain in effect in any year for which the customer pays at least the minimum annual fee for downloading, or until the termination of this Order by either party. Upon termination of this Order, except under the conditions of Clause 10.(b), the Customer shall have the right to retain and use, within the terms and conditions of this Order, all INSPEC information received under this Order. No additional INSPEC information may be downloaded following termination. The provisions of this Order shall remain in force as long as the Customer shall retain any downloaded INSPEC information.

7. The Customer acknowledges that the copyright in the material contained in the INSPEC Database and downloaded from it is the sole property of the IEE and will ensure that the IEE's copyright is made known to the users of the da Suitable acknowledgement of the copyright and source is required for all printed or copied data.

8. The IEE will endeavour to avoid errors in the information contained in the INSPEC Database BUT MAKES NO REPRESENTATIONS OR WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO THE FITNESS OF THE INFORMATION FOR ANY PURPOSE WHATSOEVER.

9. THE CUSTOMER AGREES THAT THE IEE SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OR FOR LOST PROFITS OR FOR ANY CLAIM OR DEMAND OF ANY NATURE OR KIND WHETHER ASSERTED AGAINST THE CUSTOMER OR AGAINST THE IEE BY ANY THIRD PARTY ARISING OUT OF THE SERVICES OR INFORMATION PROVIDED THROUGH THE INSPEC DATABASE OR USE OF THOSE SERVICES OR THAT INFORMATION. THE CUSTOMER AGREES TO INDEMNIFY AND TO HOLD THE IEE HARMLESS FROM CLAIMS OF THIRD PARTIES ARISING OUT OF THE CUSTOMER'S USE OF THE SERVICES OR INFORMATION PROVIDED THROUGH THE INSPEC DATABASE.

10. Termination

a) This Order may be terminated for the convenience of either party upon thirty (30) day's notice to the other party. If the termination is at the convenience of the IEE, then the Customer shall be entitled to a refund of the proportion of the pre-payment covering estimated downloading not carried out by the date of termination. If termination is for the convenience of the Customer, then the Customer shall not be entitled to any refund.

b) Should the customer copy or distribute downloaded INSPEC information in violation of this Order the IEE may notify the Customer of the breach and the Customer shall then have thirty (30) days in which to remedy the breach. The Customer's failure to remedy the breach of this Order shall entitle the IEE to terminate all of the provisions of this Order. Upon termination for such cause, the Customer shall, within sixty (60) days, destroy all downloaded INSPEC information and copies of it which are then in the hands of the customer.

11. THE IEE MAY ALTER THE CHARGE PER RECORD AS FROM THE FIRST DAY OF JANUARY IN ANY YEAR PROVIDED THAT THE IEE GIVES NOT LESS THAN ONE MONTH'S ADVANCE WRITTEN NOTICE OF SUCH ALTERATIONS.

12. This Order constitutes the entire contract between the IEE and the Customer and no modification or amendment shall be binding on either party unless it shall be in writing and signed for both parties by persons authorised to do so.

13. The Customer shall not assign the benefit of this Order or any rights granted under this Order without the prior written consent of the IEE.

14. Any notice required to be given under this Order shall be deemed to be properly given if sent by pre-paid first class post addressed to the last known address of the party for whom such notice is intended and such notice shall be deemed to have been given when it would normally have been received in the ordinary course of post.

15. The Customer shall be responsible for any breach of these terms and conditions by a staff member, employee, student or consultant of the Customer regardless of whether or not the person or persons committing such a breach shall previously have been notified of these terms and conditions.

16. If the Customer's Purchase Order Form is used in conjunction with this Order, then the Customer agrees that the following statement is hereby automatically made part of the Customer's Purchase Order:

> "The terms and conditions set forth in the INSPEC Downloading Order are made part of the Customer's Purchase Order and are in lieu of all terms and conditions, express or implied, in such Purchase Order. The terms and conditions set forth in the INSPEC Downloading Order are applicable for all renewals of this order."

17. This Order shall be governed by, and interpreted, construed and enforced according to the laws of England. Any dispute, controversy, claim or question arising out of or relating to this Order, or the breach of this Order, shall be submitted to arbitration by a sole arbitrator in accordance with the then prevailing Rules of Conciliation and Arbitration of the International Chamber of Commerce. The seat of arbitration shall be London. The award rendered by the arbitrator shall be final and binding upon the parties and judgement thereon may be

INSPEC
The Institution of Electrical Engineers

INSPEC/IEEE SERVICE CENTER
445 Hoes Lane
P.O. Box 1331
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Tel: (201) 981-0060

Lucie Carmel
Research Assistant
Ecole de bibliotheconomie et
des sciences de l'information
Universite de Montreal
C.P. 6128, Succursale A
Montreal , Quebec
Canada H3C 3J7

August 18, 1987

Dear Ms Carmel,

Thank you for your enquiry concerning tape and CD-ROM versions of the INSPEC database.

I enclose an information pack detailing our tape services which contains formats, prices and a draft contract.

We do not have a CD-ROM version at present, nor do we currently have any plans to produce one.

Please do not hesitate to contact me if you need any further information.

Yours Sincerely,

Jim Ashling

Jim Ashling
Online Training Manager

JA/mt